Instruction Manual book

MIDGET MUSTANG-EP

95% ALMOST READY TO FLY

SPECIFICATION

- Wingspan : 1,000 mm 39.37 in.
- Length : 860 mm 33.86 in.
- Weight : 1,4 kg 3.08 Lbs.
- Radio : 04 channels.
- Servo : 04 mini servos.
- Motor : KMS 2820/05.
- Battery : 3 Cells-Li-Poly11.1V 2.200 mAh.
- Speed control: 60A.
- Propeller: 10 x 10.

Made in Vietnam.

This instruction manual is designed to help you build a great flying aeroplane. Please read this manual thoroughly before starting assembly of you**MIDGET MUSTANG - EP**. Use the parts listing below to identify all parts.

WARNING.

Please be aware that this aeroplane is not a toy and if assembled or used incorrectly it is capable of causing injury to people or property. WHEN YOU FLY THIS AEROPLANE YOU ASSUME ALL RISK & RESPONSIBILITY.

If you are inexperienced with basic R/C flight we strongly recommend you contact your R/C supplier and join your local R/C Model Flying Club. R/C Model Flying Clubs offer a variety of training procedures designed to help the new pilot on his way to successful R/C flight. They will also be able to advise on any insurance and safety regulations that may apply.

TOOLS & SUPPLIES NEEDED.

- ☐ Thick cyanoacrylate glue.
- ☐ 30 minute epoxy.
- ☐ 5 minute epoxy.
- ☐ Hand or electric drill.
- ☐ Assorted drill bits.
- ☐ Modelling knife.
- ☐ Straight edge ruler.
- ☐ 2mm ball driver.
- ☐ Phillips head screwdriver.
- ☐ 220 grit sandpaper.
- ☐ 90° square or builder's triangle.
- ☐ Wire cutters.
- ☐ Masking tape & T-pins.
- ☐ Thread-lock.
- ☐ Paper towels.

PARTS LISTING.

FUSELAGE ASSEMBLY

- ☐ (1) Fuselage.

WING ASSEMBLY

- ☐ (1) Right wing half with pre-installed aileron.
- ☐ (1) Left wing half with pre-installed aileron.

Tail section assembly

- ☐ (1) Vertical stabilizer with pre-installed rudder.
- ☐ (1) Horizontal stabilizer with pre-installed elevator halves.

Some more parts.

HARDWARE PACK

COWLING.
Landing gear.....

SUGGESTION.

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

NOTE.

Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly.**MIDGET MUSTANG-EP** ARF is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.
The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.

SAFETY PRECAUTION.

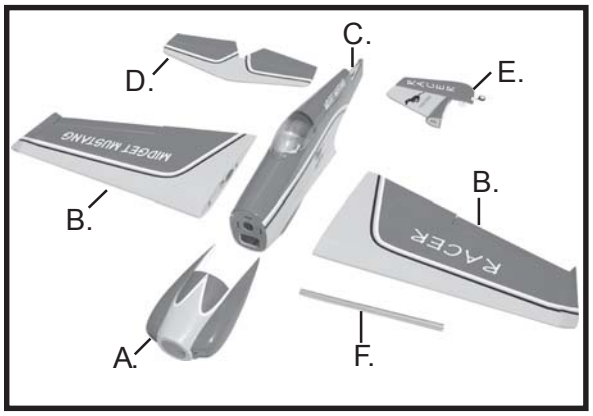
+ This is not a toy
+ Be sure that no other flyers are using your radio frequency.
+ The glow plug clip must be securely attached to the glow plug.

+ Do not flip the propeller with your fingers.

+ Keep loose clothing and wires away from the propeller.

+ Do not st art the motor if people are near . Do not stand in line with the side of the propeller.

REPLACEMENT LARGE PARTS



A. Cowling.

D . Horizontal stabilizer.

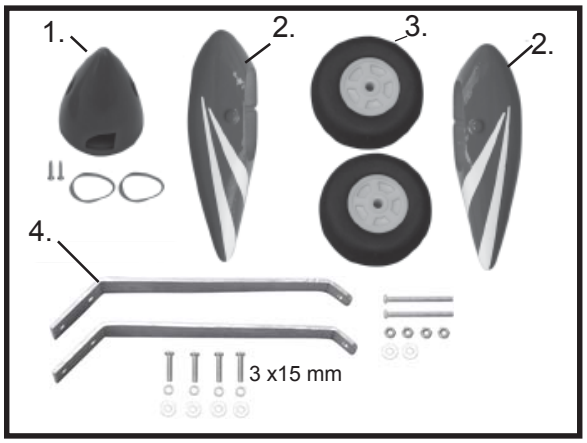
B. Wing panel.

E. Vertical stabilizer.

C. Fuselage.

F. Aluminium wing dihedral brace.

REPLACEMENT SMALL PARTS

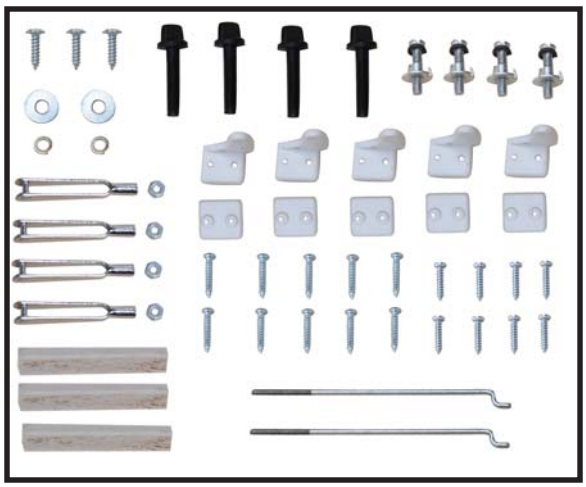


1. Spinner.

2. Wheel spant.

3. Wheels

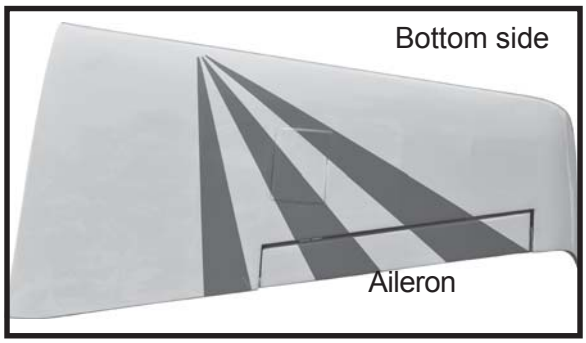
4. Aluminium landing gear.

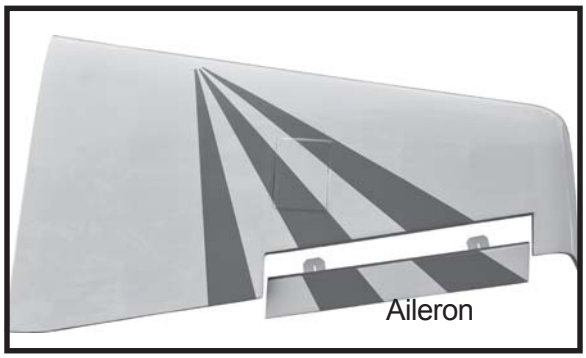


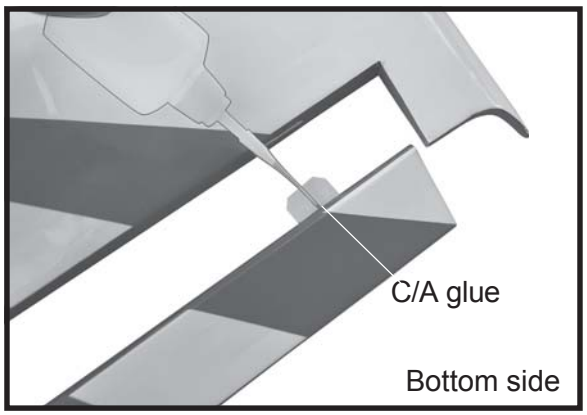
I. AILERON.

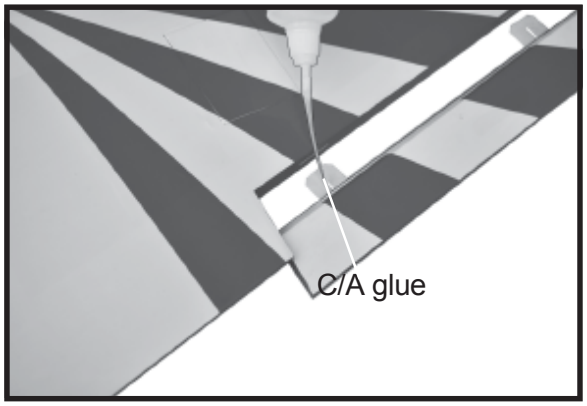
1.INSTALLING THE AILERON SERVOS.

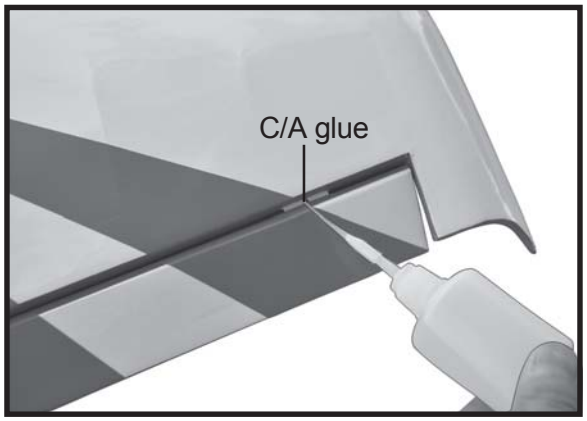
☐ 1) Install the rubber grommets and brass eyelets onto the aileron servos.

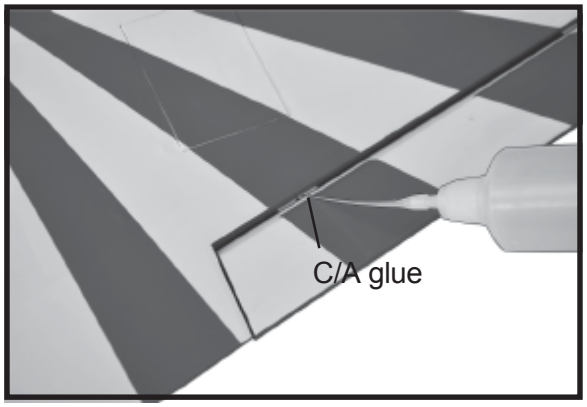


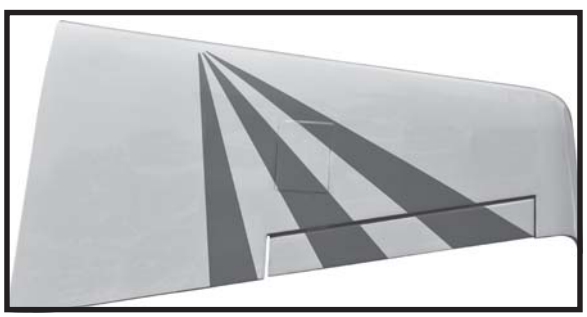


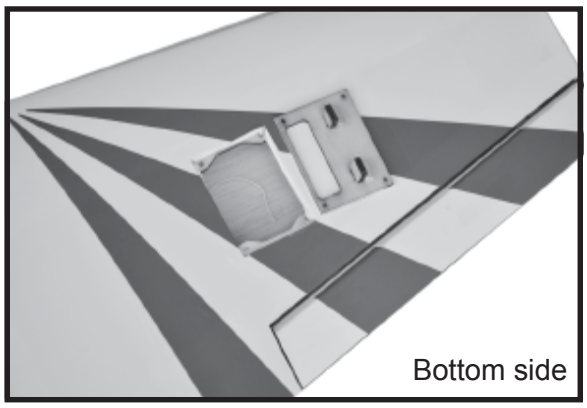




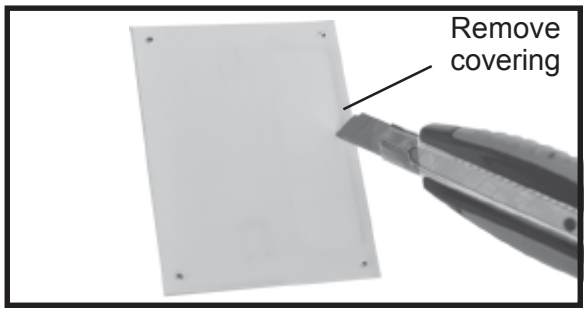


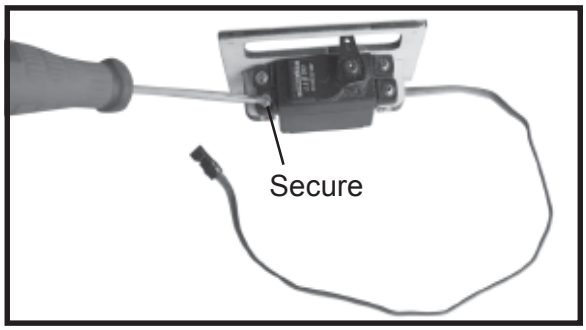






☐ 2) Using a modeling knife, remove the covering at possition show below.

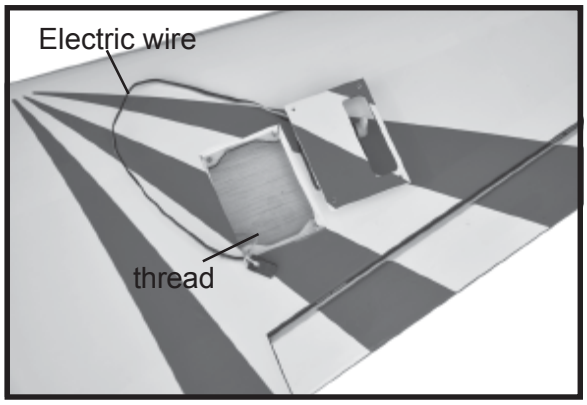


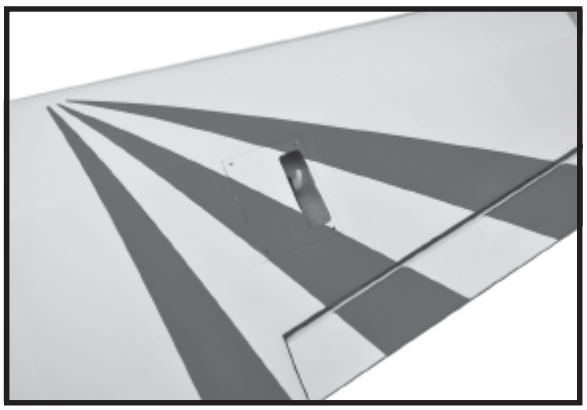


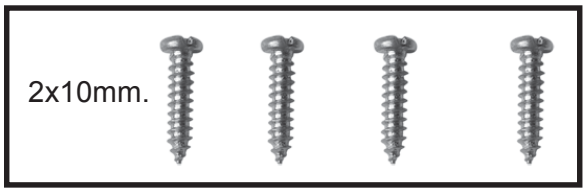
☐ 3) Using the thread as a guide and using masking tape, tape the servo lead to the end of the thread: carefully pull the thread out. When you have pulled the servo lead out, remove the masking tape and the servo lead from the thread.

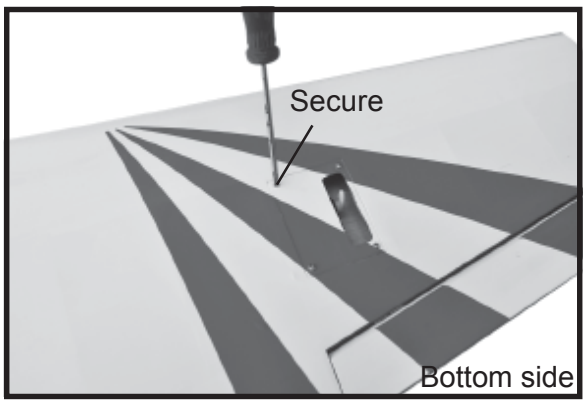
☐ 4) Drill 1,6mm pilot holes through the block of wood for each of the four mounting screws provided with the servo.

☐ 5. Instal servo tray with aileron servo into the wing as same as picture below.

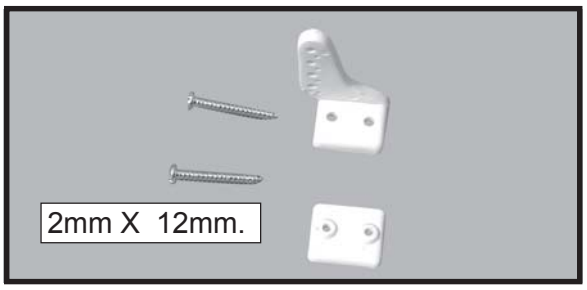




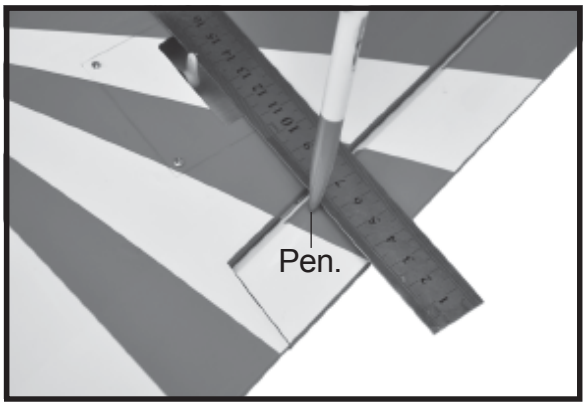


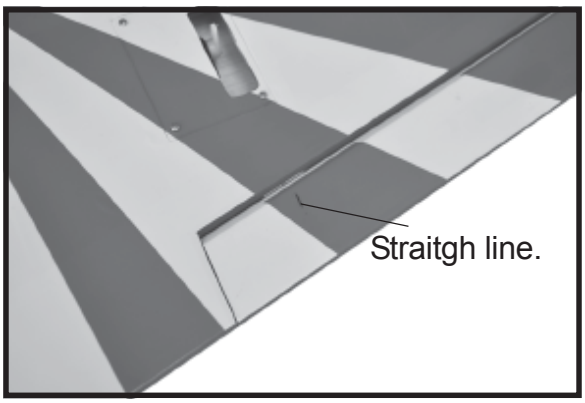


INSTALLING THE AILERON CONTROL HORN.



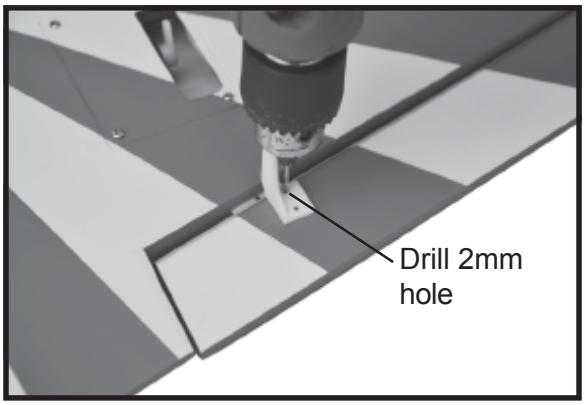
☐ 1) Using a ruler & pen to draw a straight line as below picture.

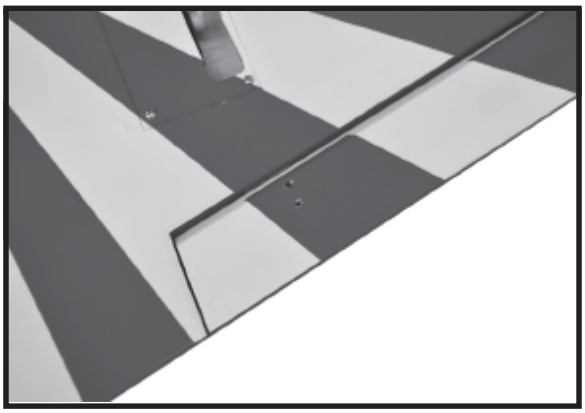


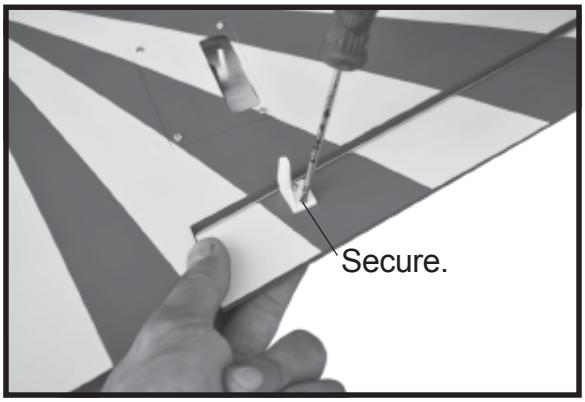


☐ 2) Insert aileron control horn to the aileron.

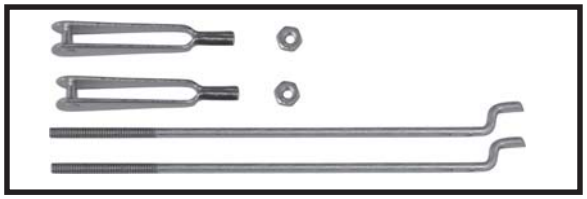
☐ 3) Drill two 2mm holes through the aileron using the control horn as a guide and screw the control horn in place.

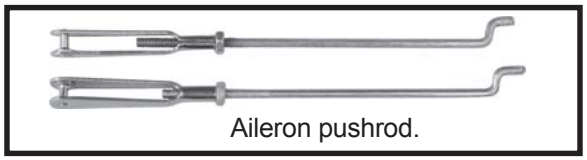




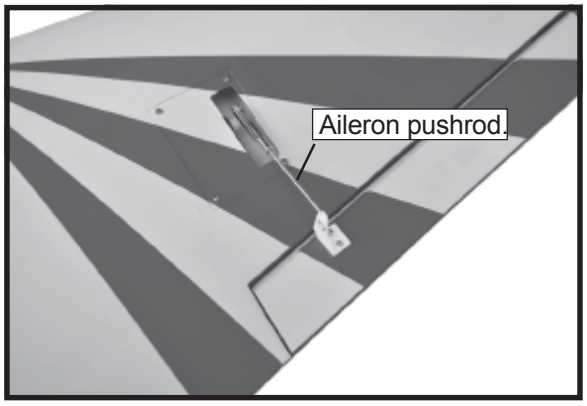


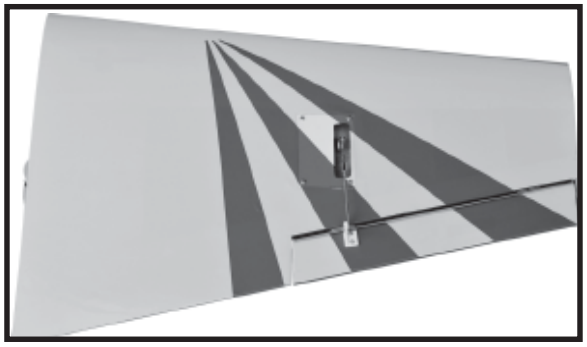
INSTALLING THE AILERON LINKAGES.

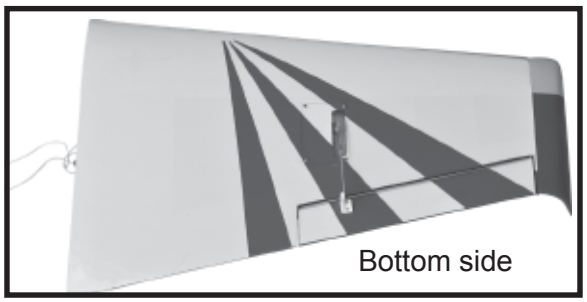




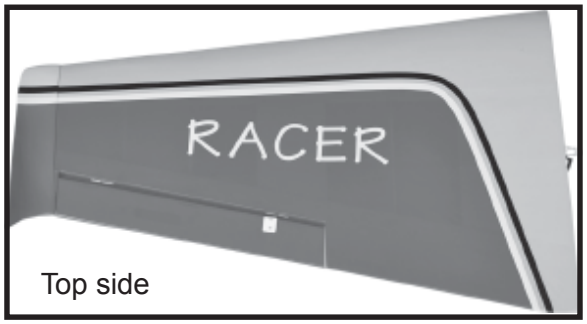
Aileron pushrod.







Bottom side

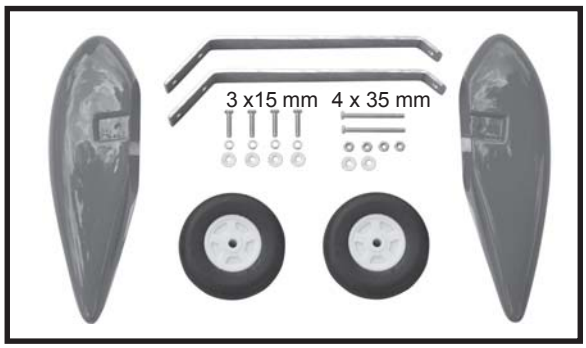


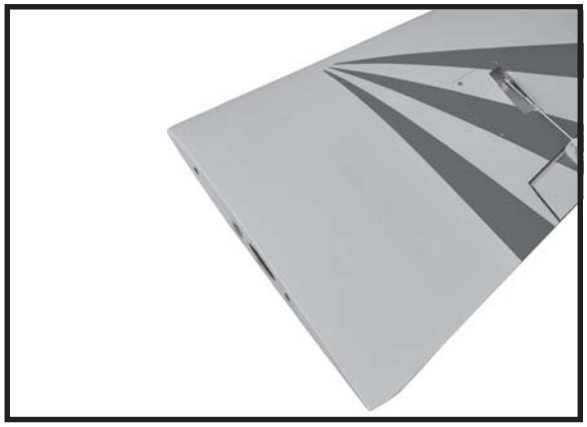
Top side

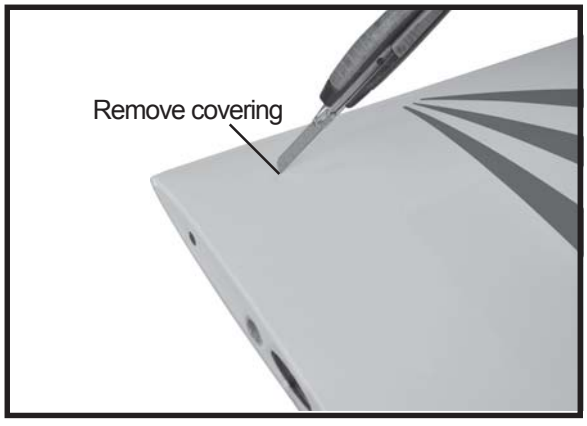
Repeat the procedure for the other wing half.

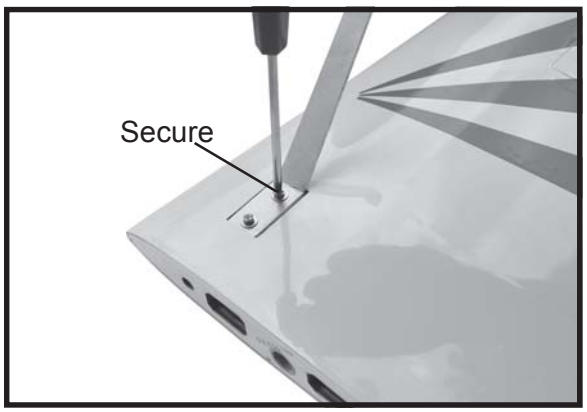
MAIN GEAR INSTALATION.

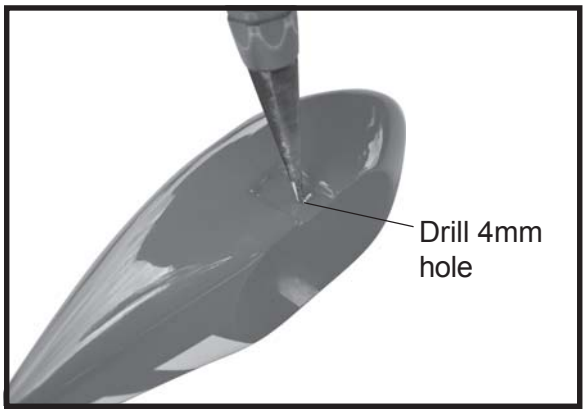
PARTS REQUIRED

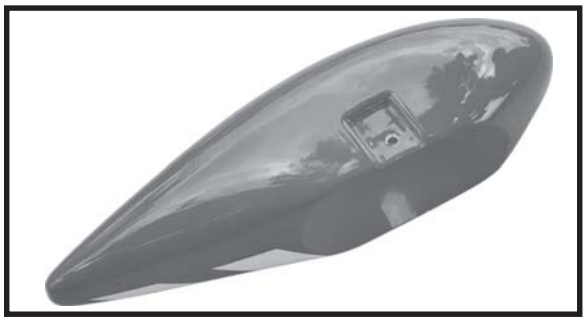


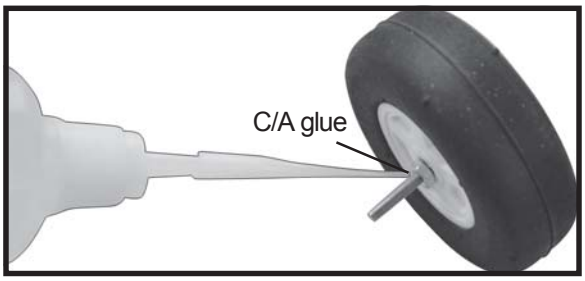


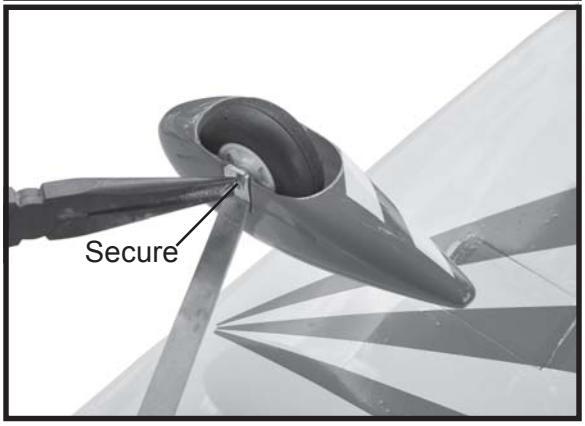


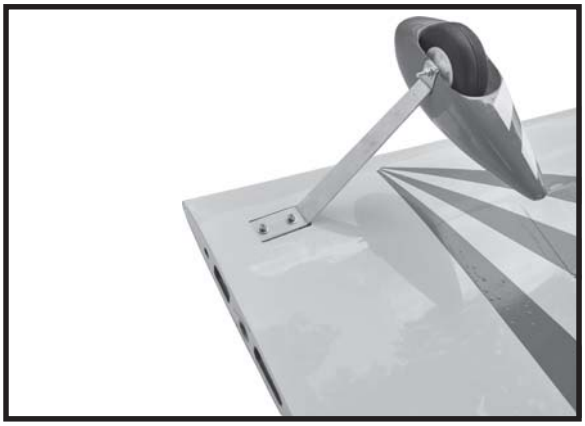


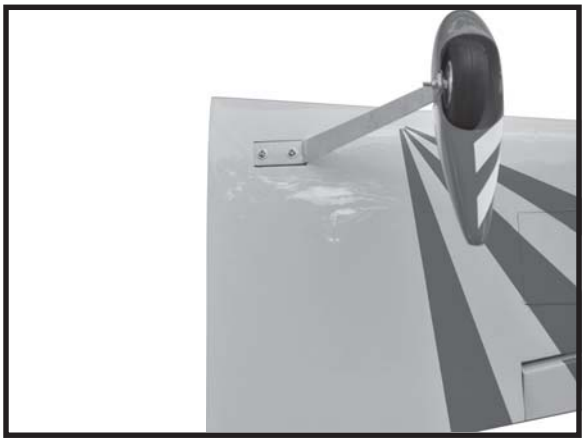








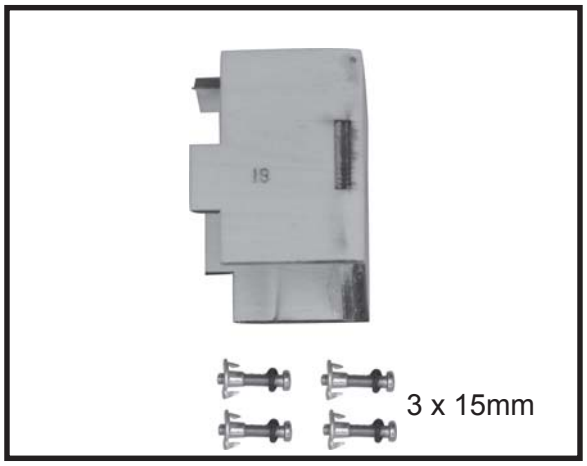


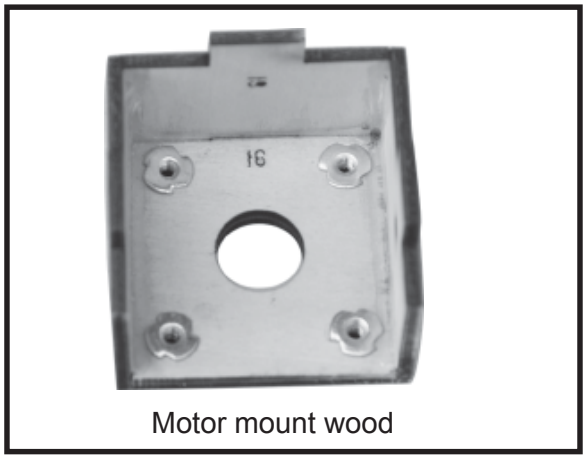


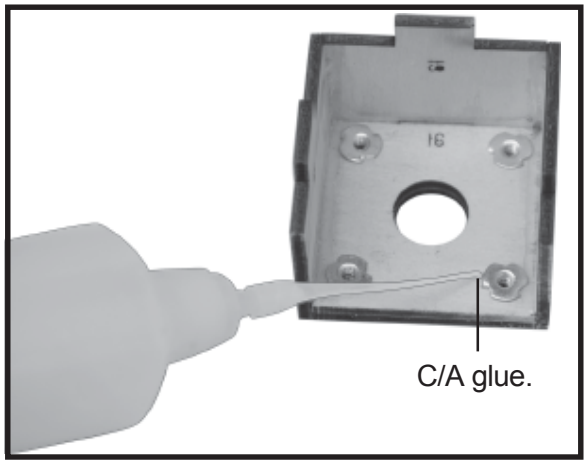
Repeat the procedure for the other wing half.

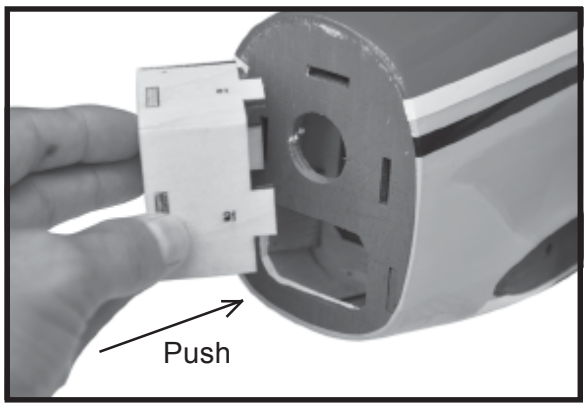
INSTALLING ELECTRIC MOTOR.

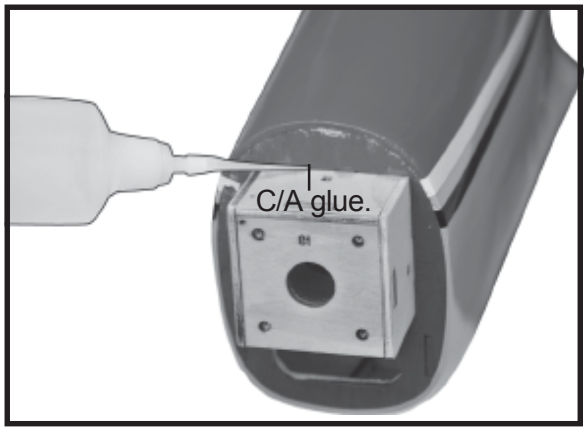
See pictures below:

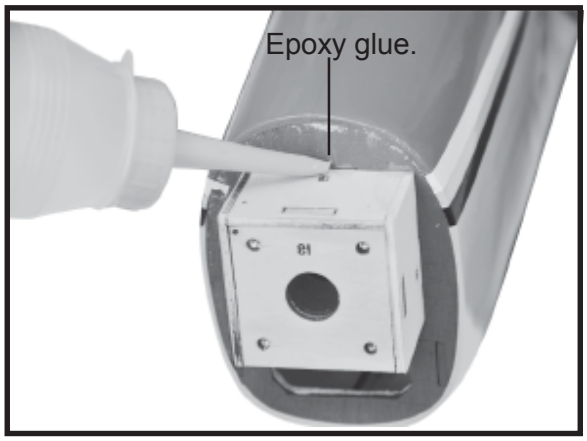


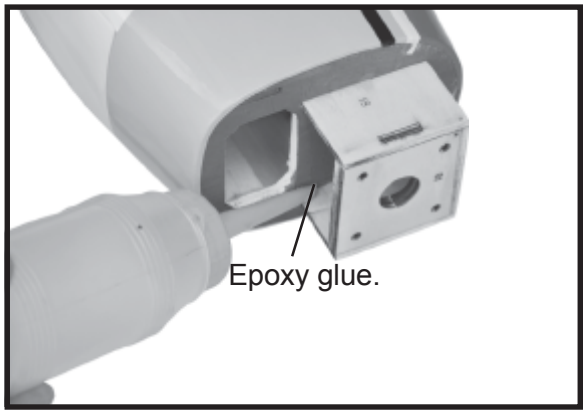


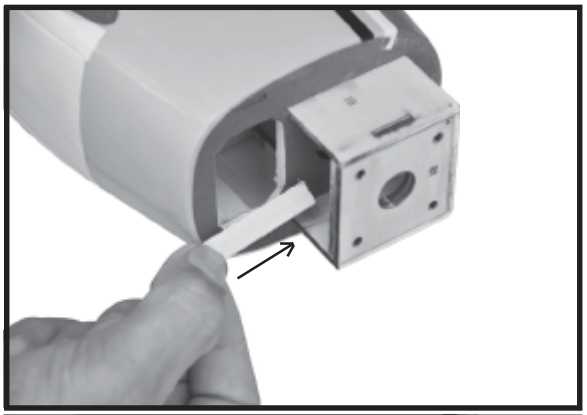


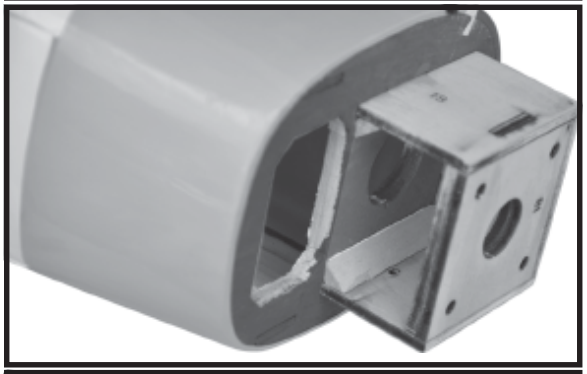


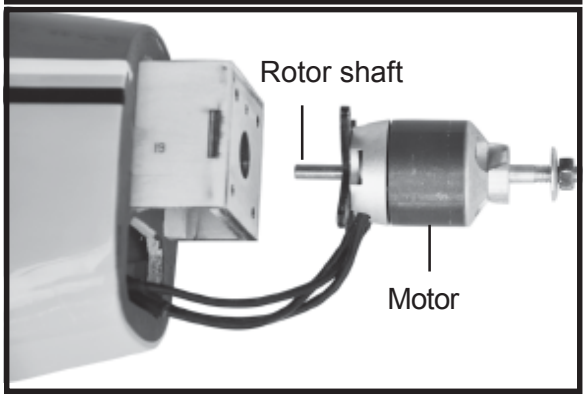


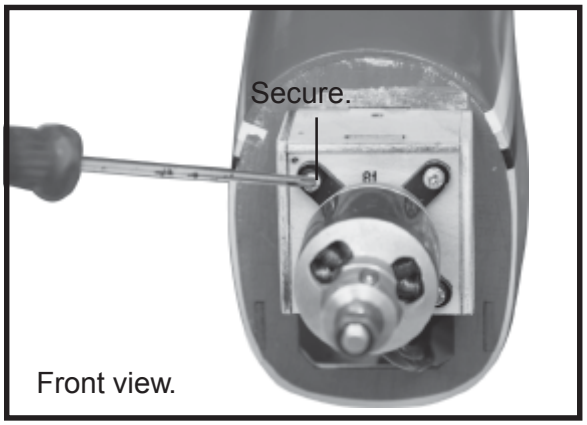


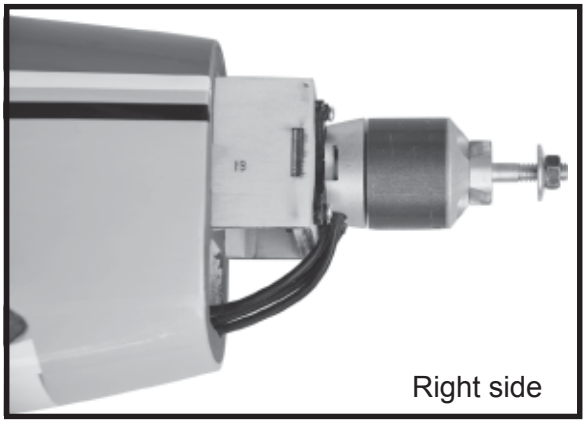


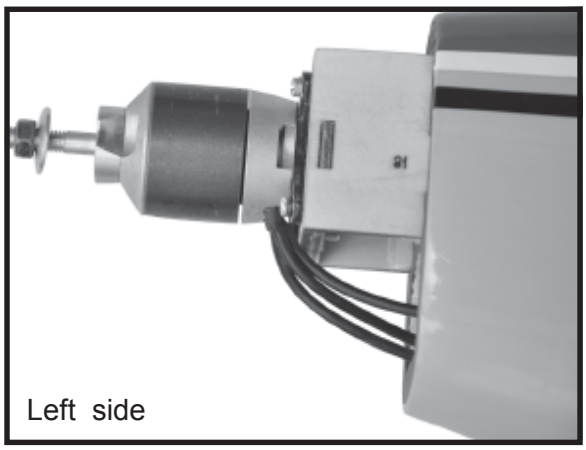












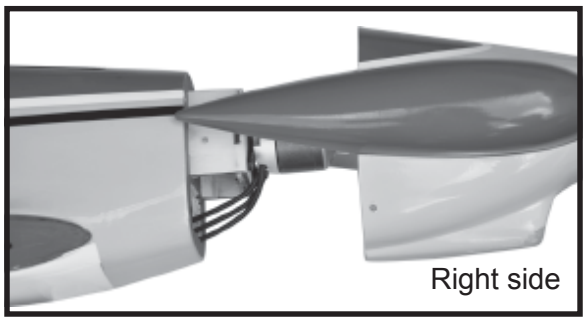
COWLING.

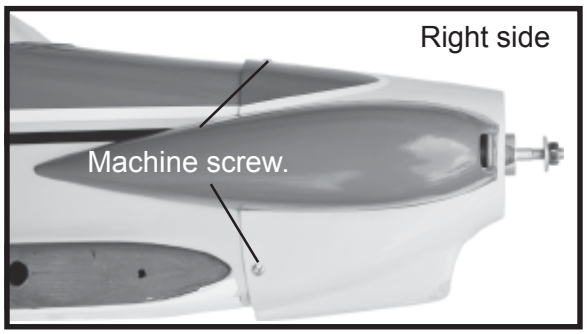
☐ 1. Slide the fiberglass cowl over the engine and line up the back edge of the cowl with the marks you made on the fuselage.

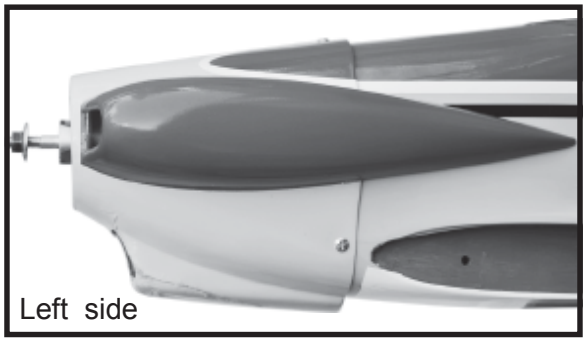
☐ 2. While keeping the back edge of the cowl flush with the marks, align the front of the cowl with the crankshaft of the engine. The front of the cowl should be positioned so the crankshaft is in **nearly** the middle of the cowl opening. Hold the cowl firmly in place using pieces of masking tape.

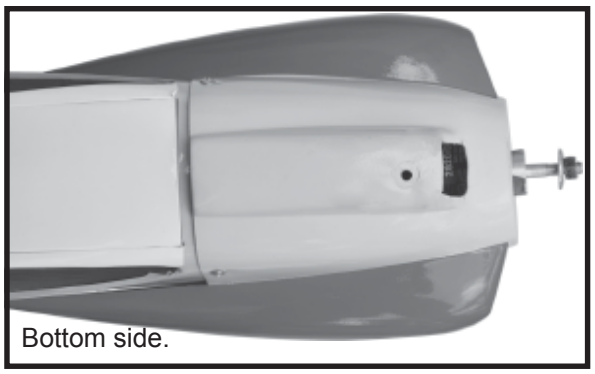
☐ 3. Slide the cowl back over the engine and secure it in place using four wood screws. See picture below.

☐ 4. Install the muffler and muffler extension onto the engine and make the cutout in the cowl for muffler clearance. Connect the fuel and pressure lines to the carburetor , muffler and fuel filler valve.



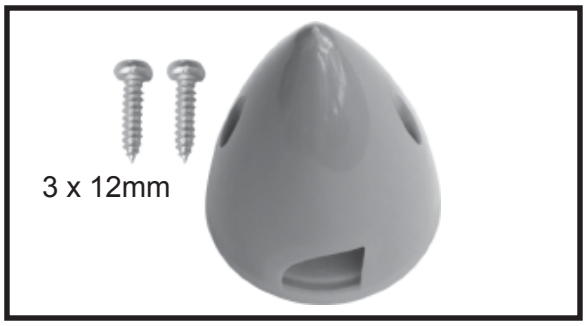


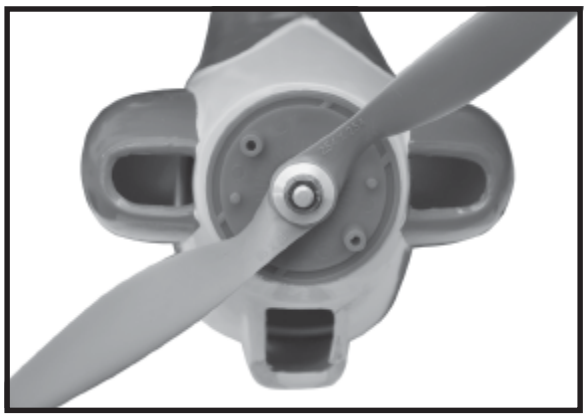


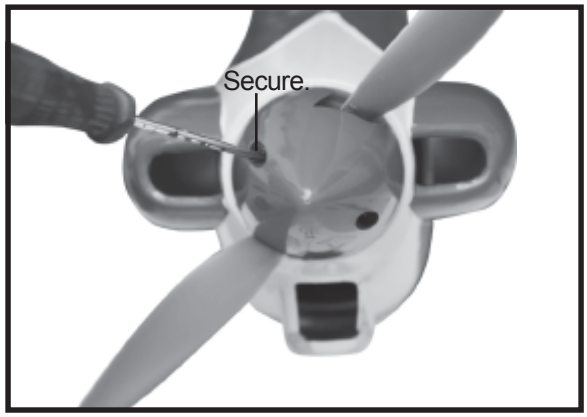


INSTALLING THE SPINNER.

Install the spinner backplate, propeller and spinner cone. The spinner cone is held in place using two 3mm x 12mm wood screws.





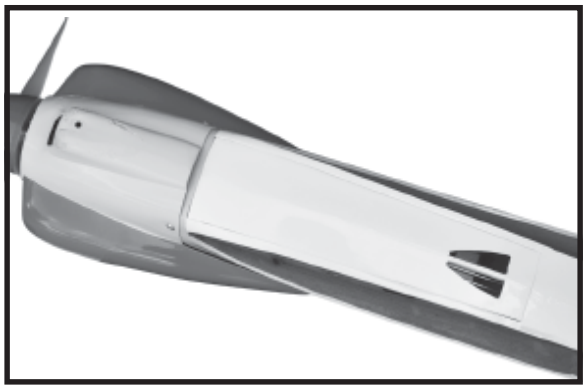


ELEVATOR INSTALLATION.

SERVO INSTALLATION.

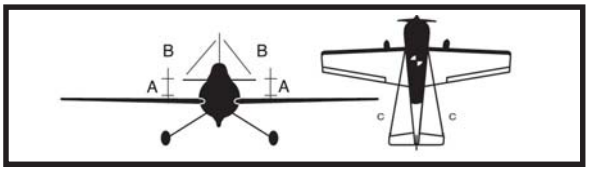
☐ 1. Install the rubber grommets and brass collets into the elevator servo.Test fit the servo into the servo tray.

☐ 2. Mount the servo to the tray using the mounting screws provided with your radio system.

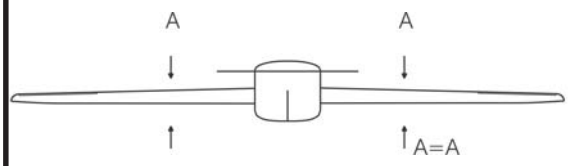


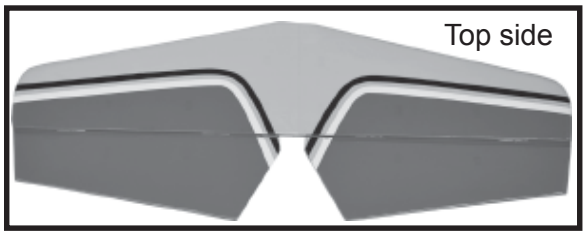
HORIZONTAL STABILIZER.

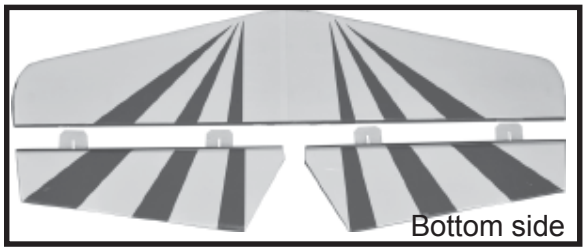
See pictures below:

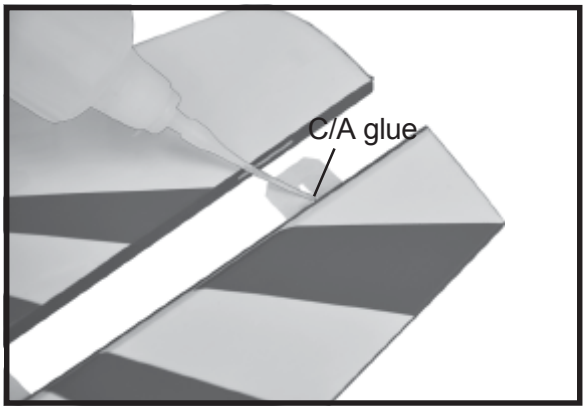


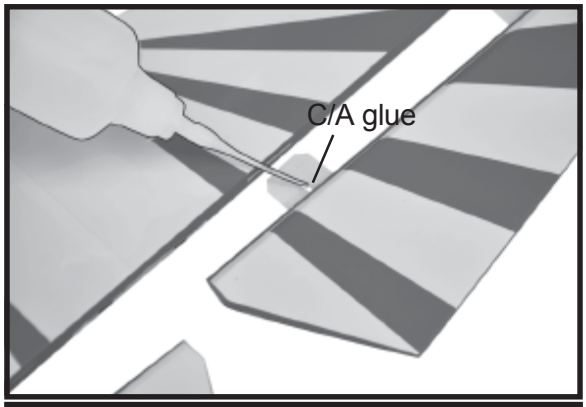
Check to mark sure the wing and stabilizer are paralell. If they are not, lightly sand the opening in the fuselage for the stabilizer until the stabilizer is paralell to the wing.

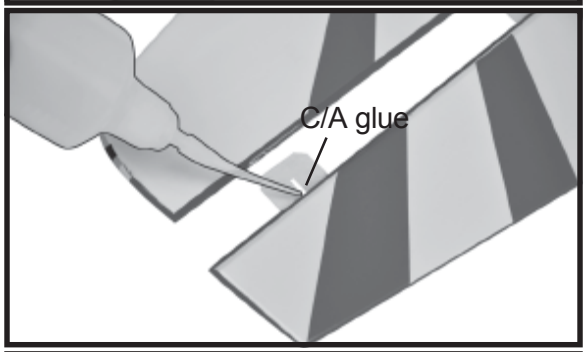


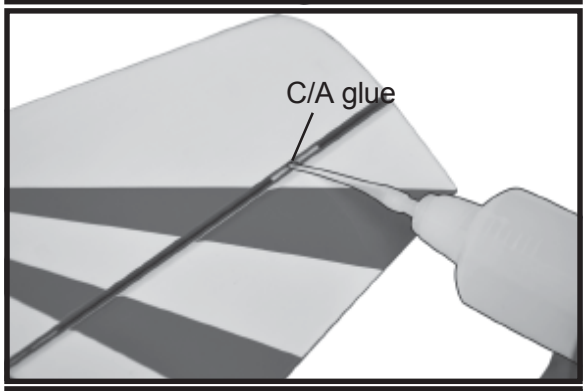


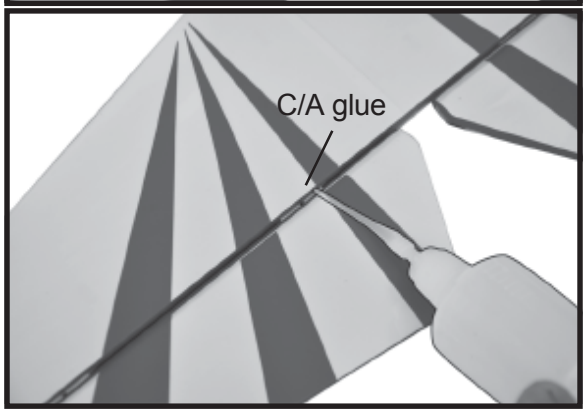




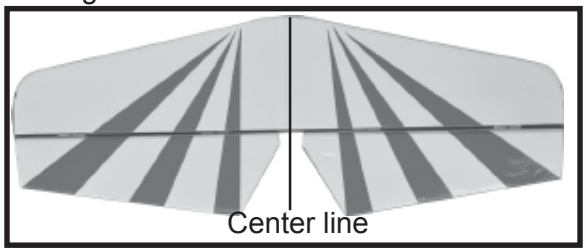




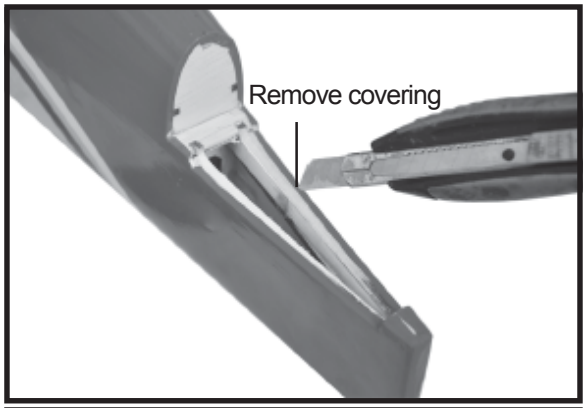




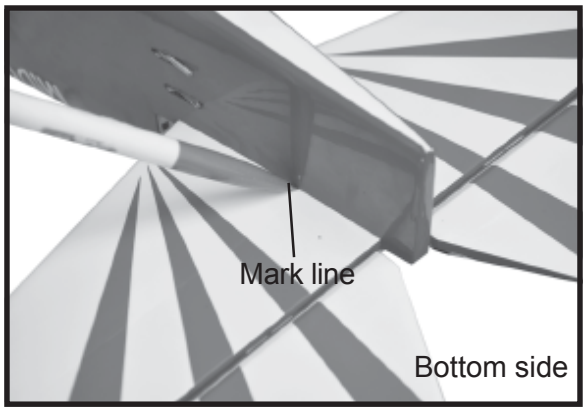
☐ 1. Draw a center line onto the horizontal stabilizer. Then slide the horizont al into the fuselage.



☐ 2 Using a modeling knife, cut away the covering from the fuselage for the stabilizer and remove it.

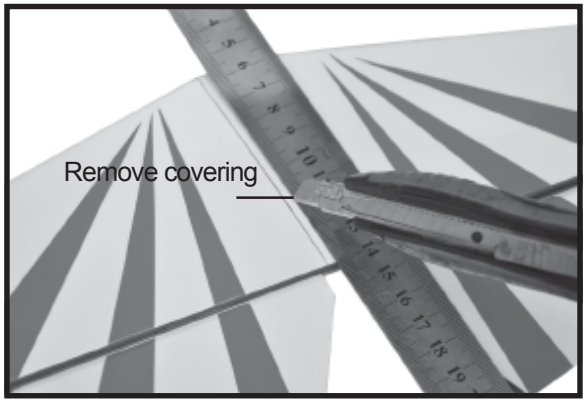


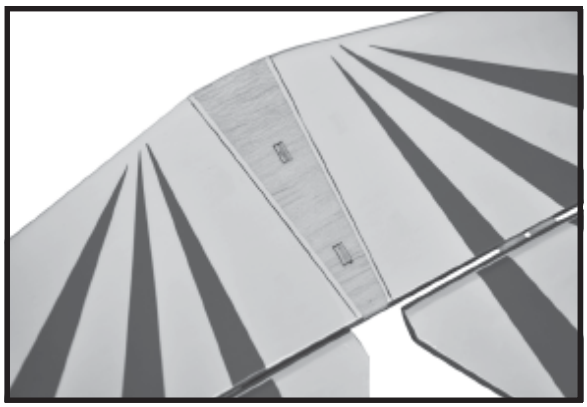
☐ 3. Mark the shape of the vertical on the left and right sides onto the horizontal stabilizer using a felt-tip pen



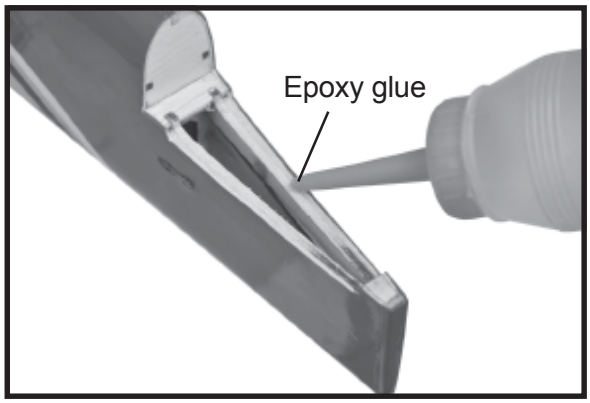
☐ 4. Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.

When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering it's self. Cutting into the balsa structure may weaken it. This could lead to possible failure during flight

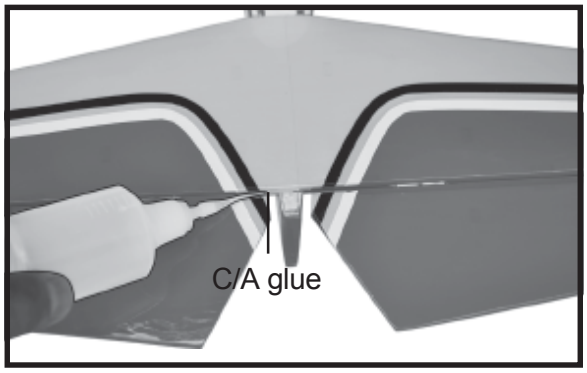


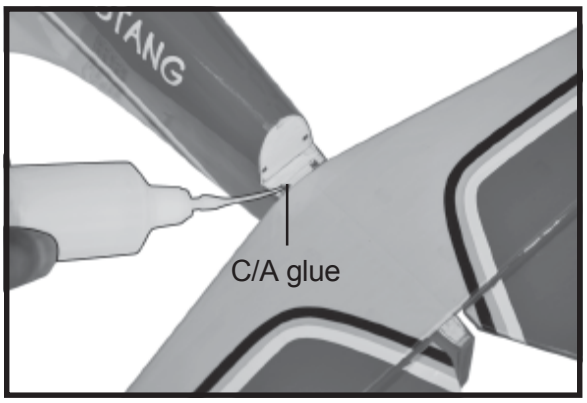


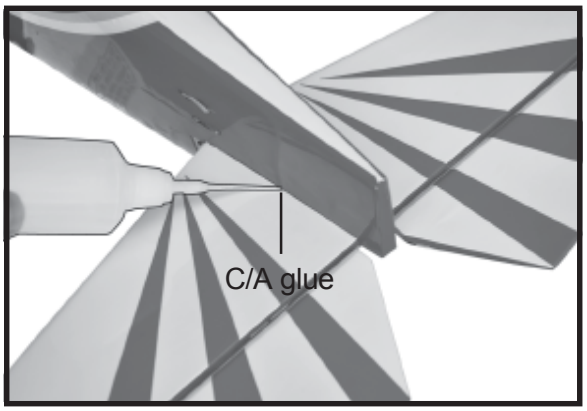
☐ 5. When you are sure that everything is aligned correctly, mix up a generous amount of 30 minute epoxy. Apply a thin layer to the top and bottom of the stabilizer mounting area and to the stabilizer mounting platform sides in the fuselage. Slide the stabilizer in place and re-align. Double check all of your measurements one more time before the epoxy cures. Remove any excess epoxy using a paper towel and rubbing alcohol and hold the stabilizer in place with T-pins or masking tape.



☐6. After the epoxy has fully cured, remove the masking tape or T-pins used to hold the stabilizer in place and carefully inspect the glue joints. Use more epoxy to fill in any gaps that were not filled previously and clean up the excess using a paper towel and rubbing alcohol.

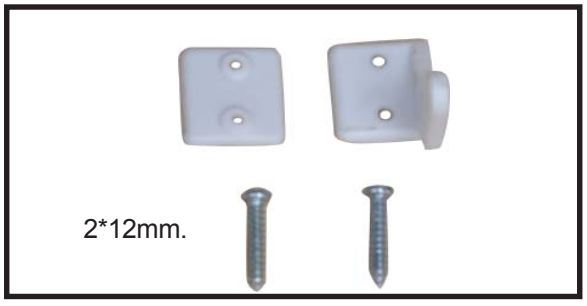


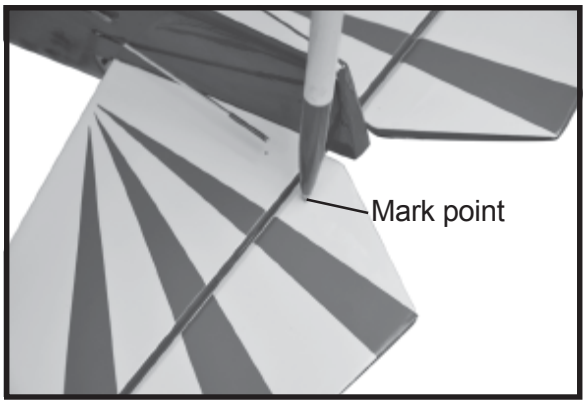


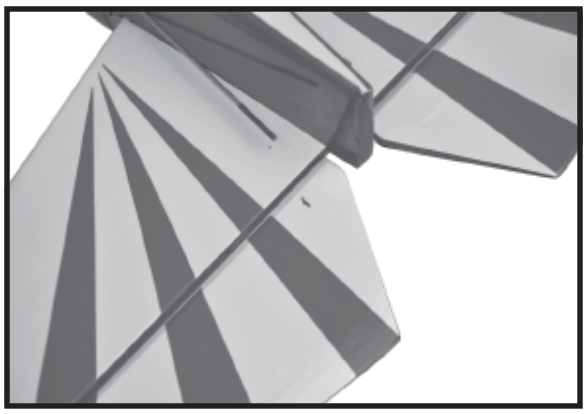


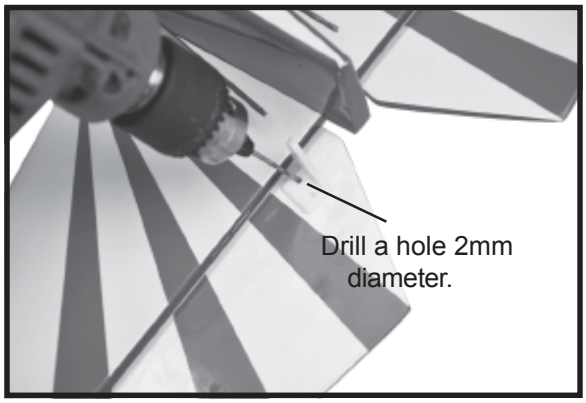
ELEVATOR CONTROL HORN INSTALLATION.

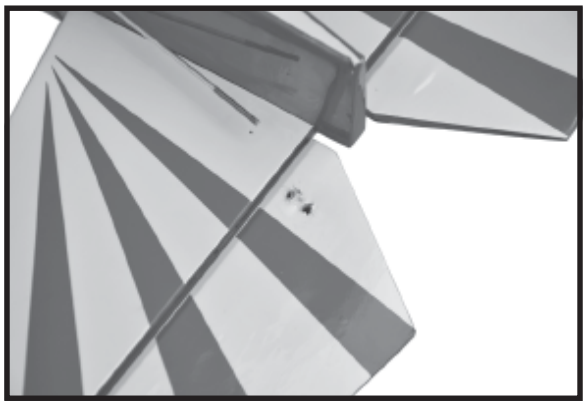
Elevator control horn install as same as the way of aileron control horn. Please see pictures below.

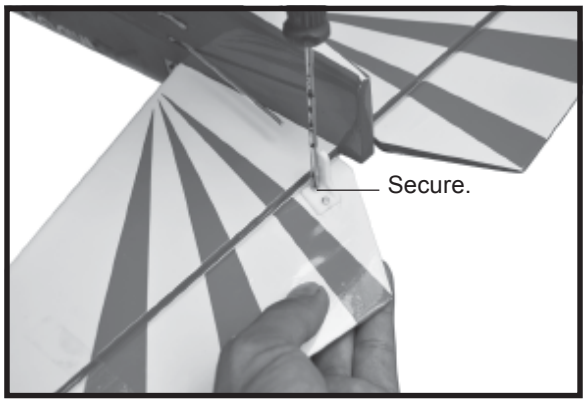






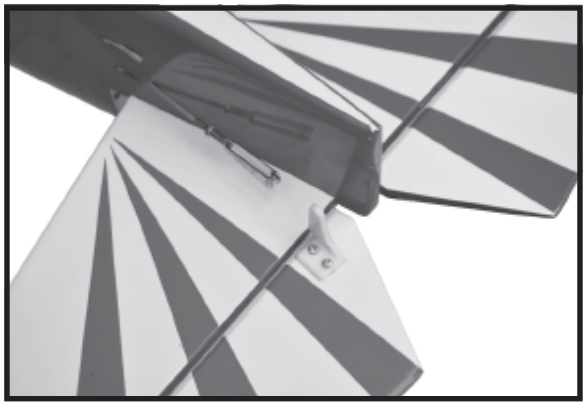


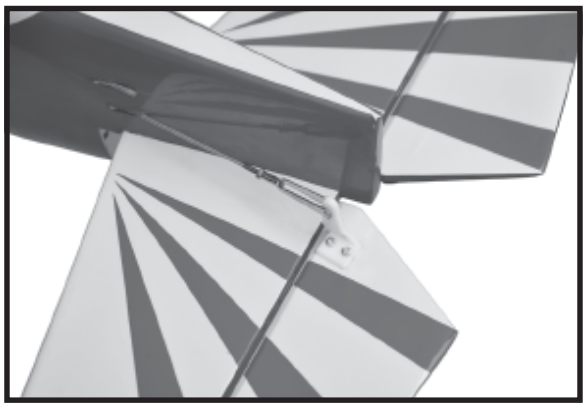


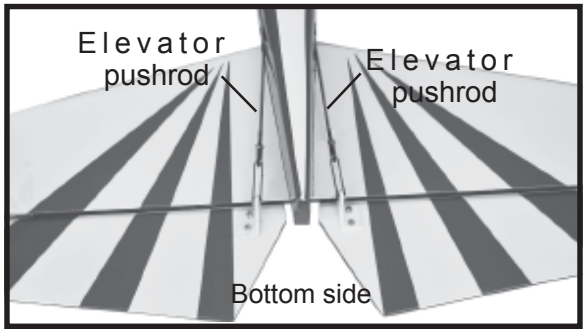


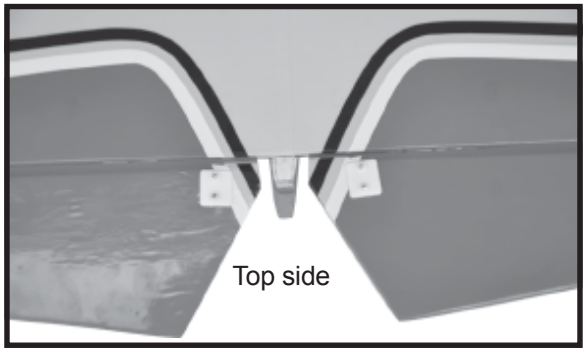
ELEVATOR PUSHROD INSTALLATION.

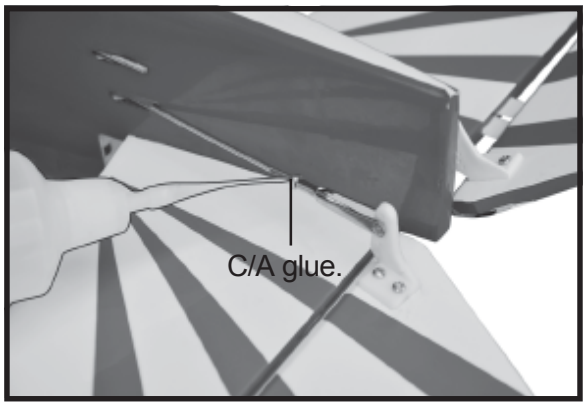
Elevator and rudder pushrod install as same as the way of aileron pushrod.

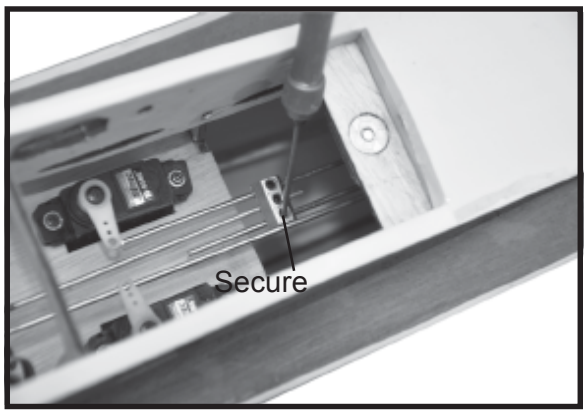


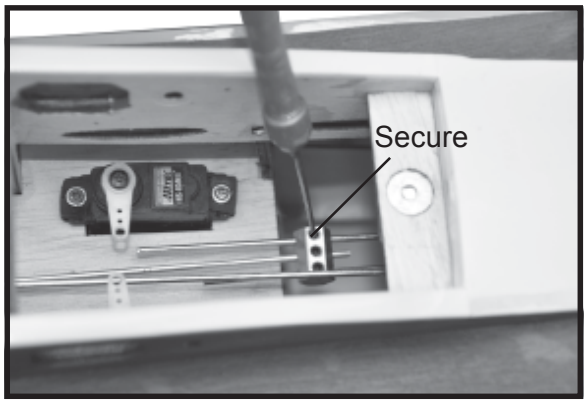



Elevator pushrod
Elevator pushrod
Bottom side


Top side


C/A glue.


Secure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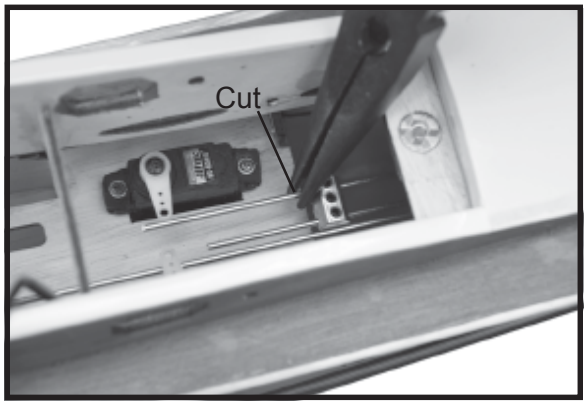
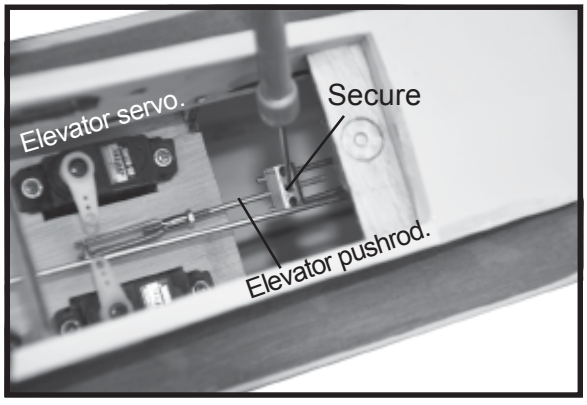
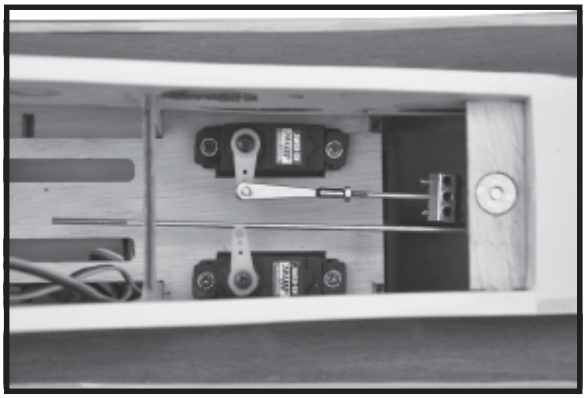
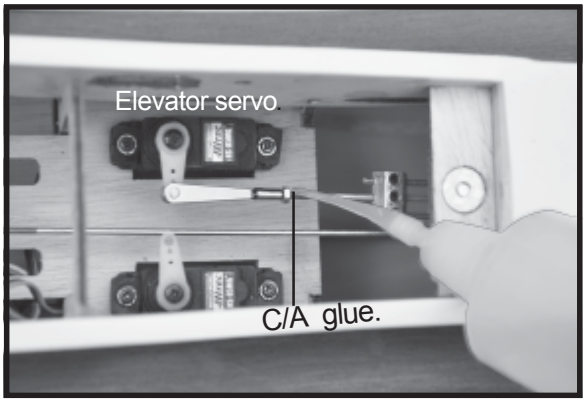

Cut

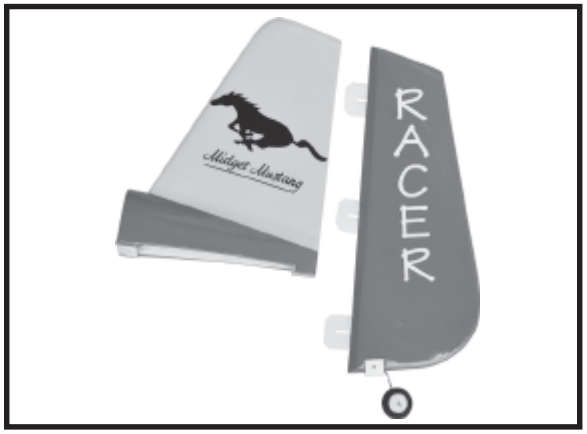

Elevator servo.
Secure
Elevator pushrod.

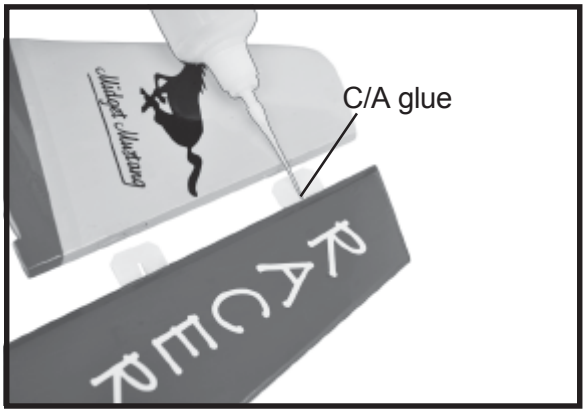


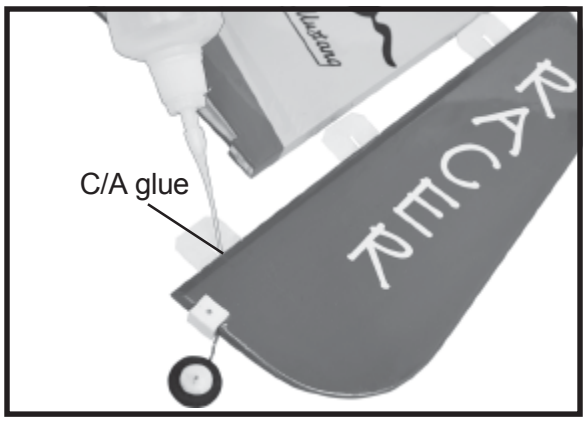


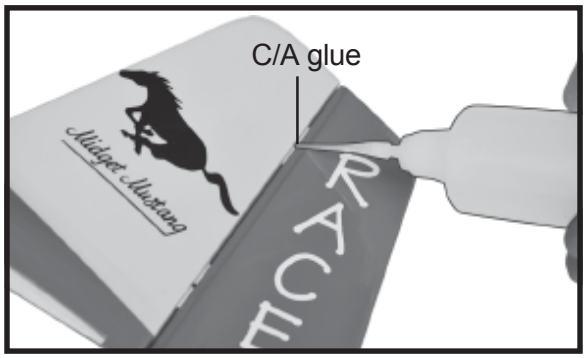
VERTICAL INSTALLATION.

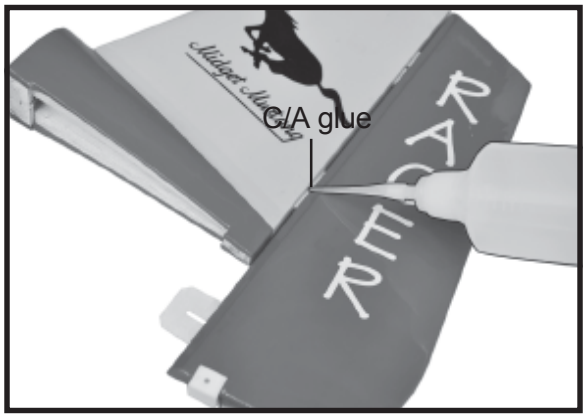
Rudder servo install as same as method of elevator servo. See picture below:

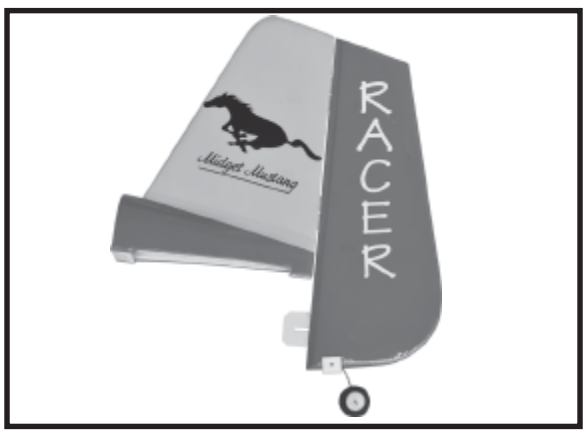




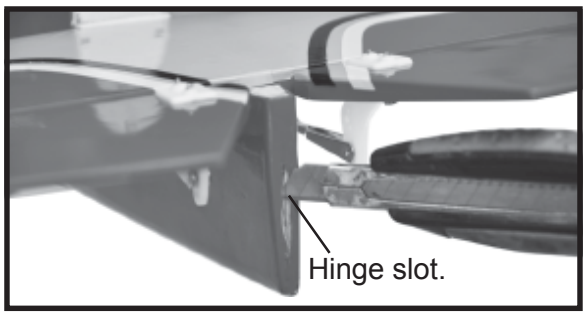






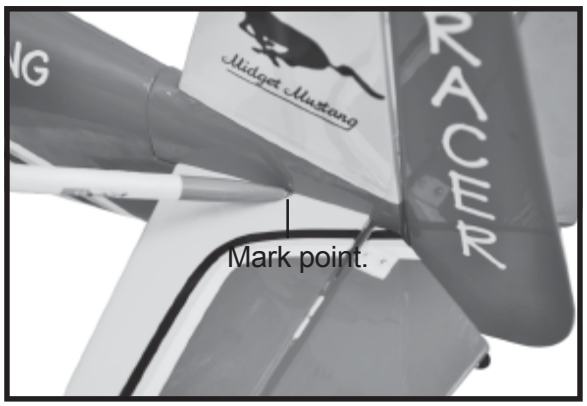


□ 1. Using a modeling knife cut away the covering from the end of fuselage for the rudder hinge.

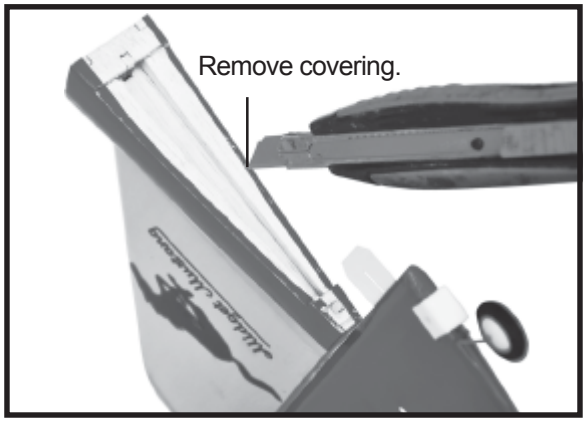


☐ 2. Put the rudder into the fuselage as same as picture below.

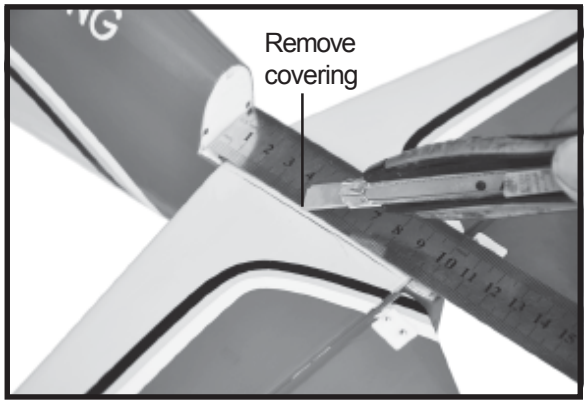
☐ 3. Mark the shape of the vertical on the left and right side of the rudder on to the horizontal stabilizer using a felt-tip pen.

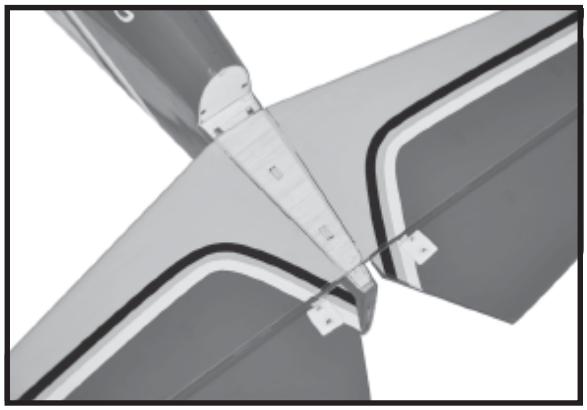


☐ 4. Now, remove the rudder and using a modeling knife, carefully cut just inside the marked lines and remove the film of the rudder. Just as you did with the horizontal stabilizer, make sure you only press hard enough to cut the film, not the balsa rudder.

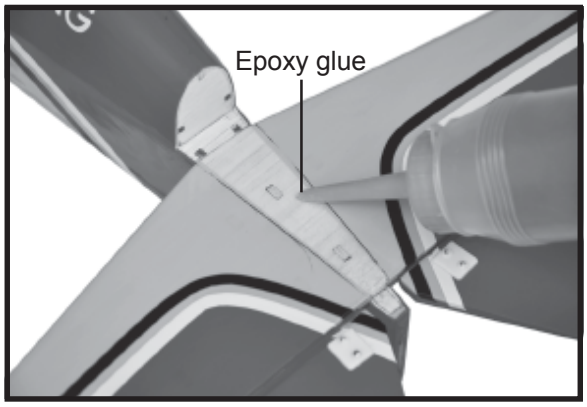


☐ Also carefully remove the covering from the horizontal fin as below the lines which you drew as same picture below.

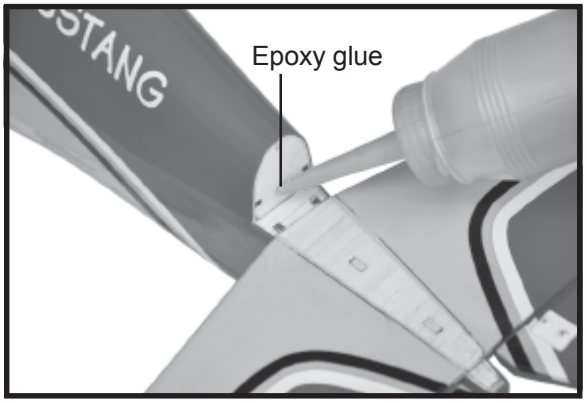


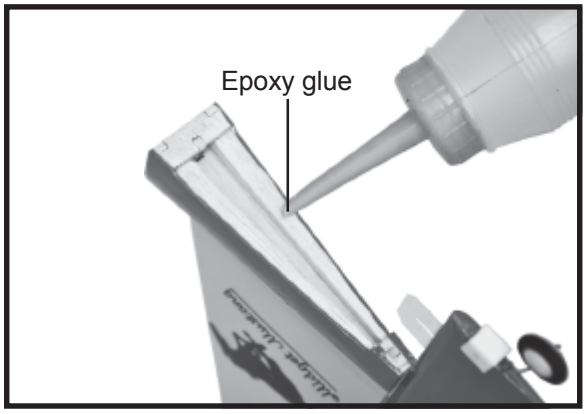


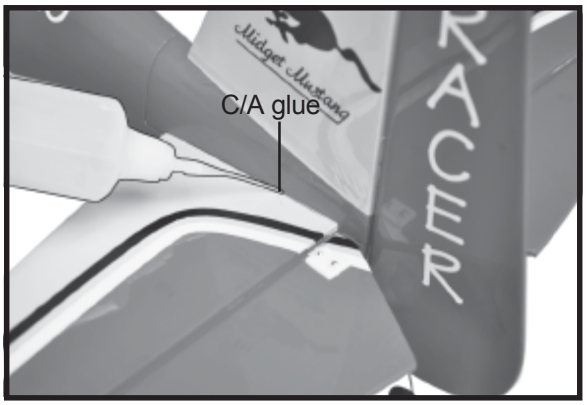
☐ 5. Put the vertical stabilizer back in place. Using a triangle, check to ensure that the vertical stabilizer is aligned 90 degree to the horizontal stabilizer.

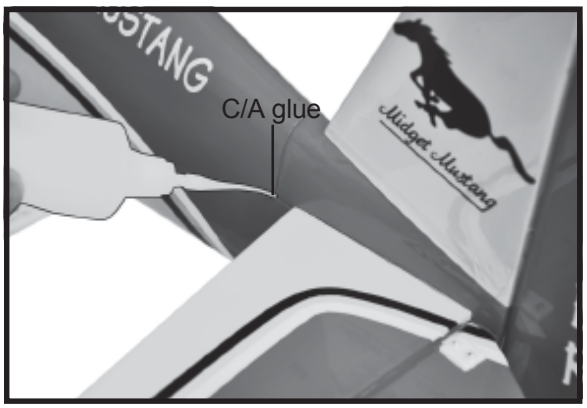


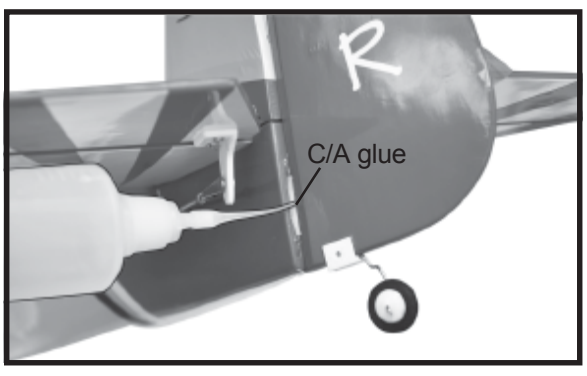
☐ 6) When you are sure that everything is a aligned correctly, mix up a generous amount of 30 minute epoxy. Apply a thin layer to the slot in the mounting platform and to the vertical stabilizer mounting area. Apply epoxy to the lower rudder hinge. Set the stabilizer in place and re-align. Double check all of your measurements once more before the epoxy cures. Remove any excess epoxy using a paper towel and rubbing alcohol and hold the stabilizer in place withT-pins or masking tape. Allow the epoxy to fully cure before proceeding.





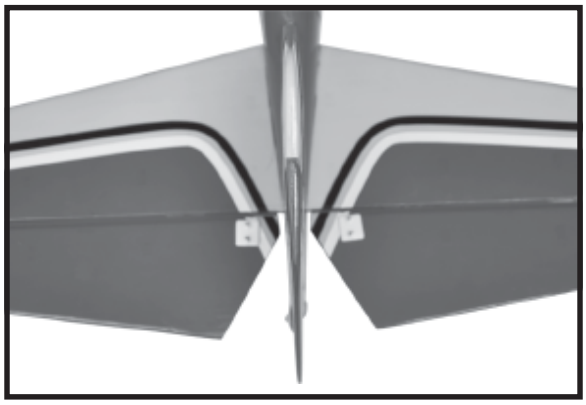


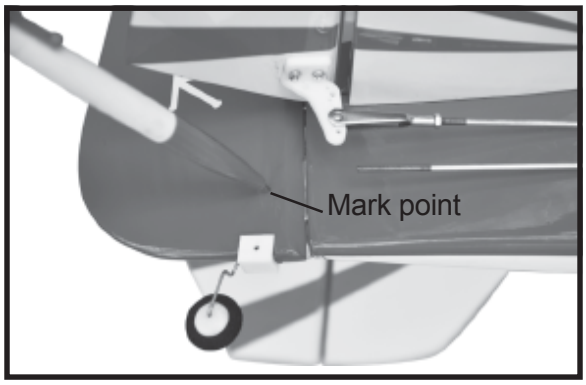


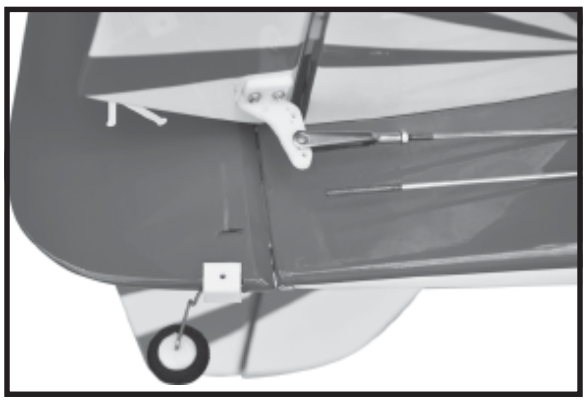


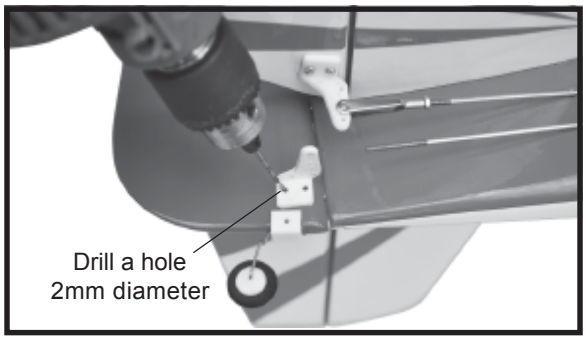
RUDDER CONTROL HORN INSTALLATION.

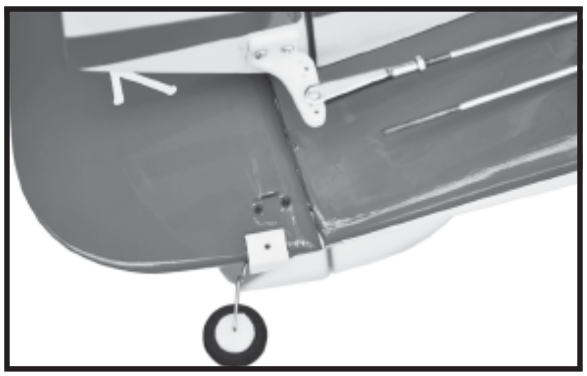
Rudder control horn install as same as the way of aileron control horn. Please see pictures below.

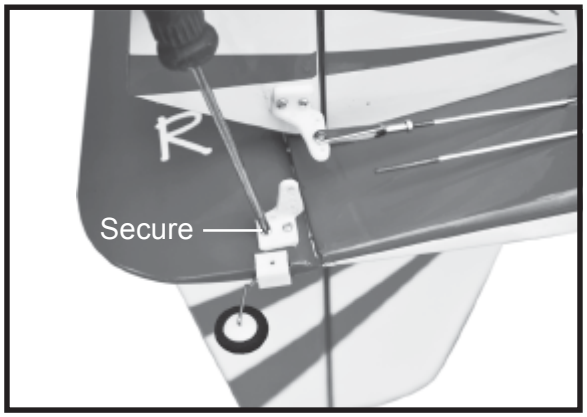






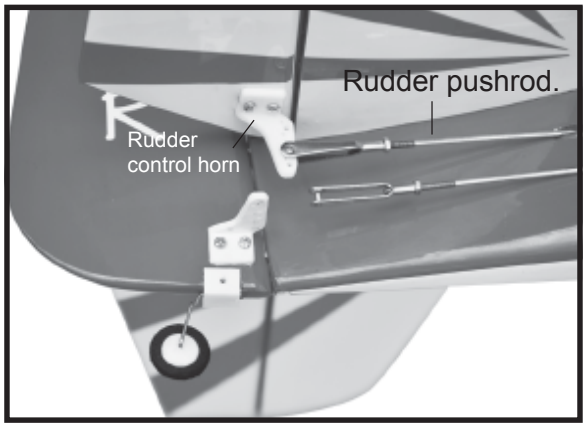


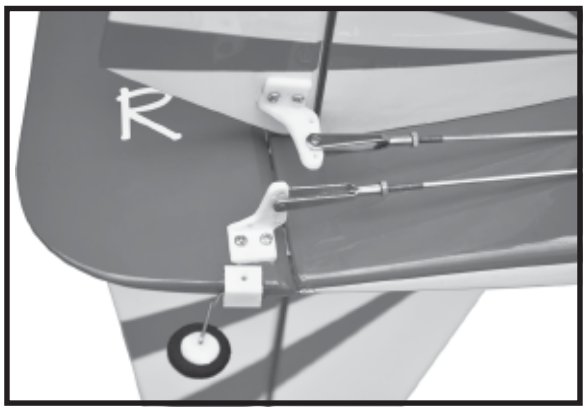


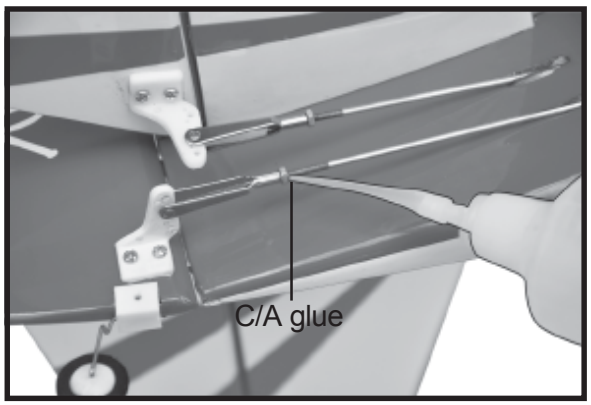


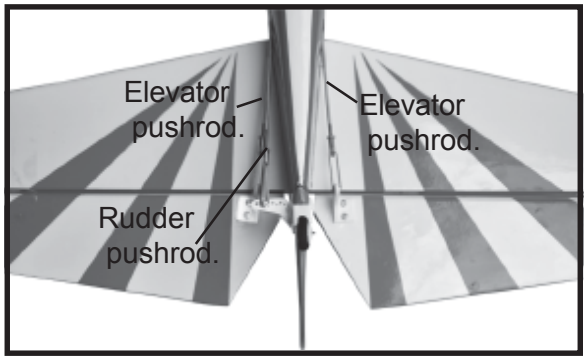
RUDDER PUSHROD INSTALLATION.

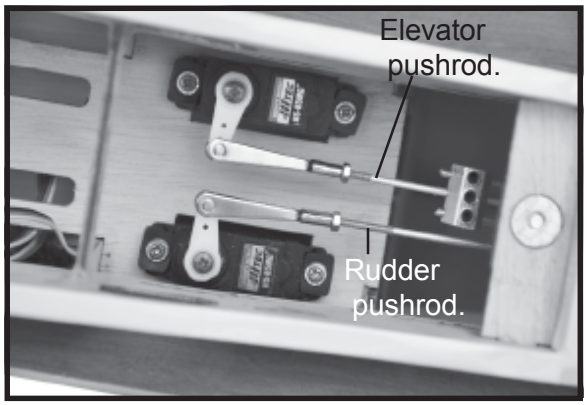
Rudder pushrod install as same as the way of aileron pushrod.

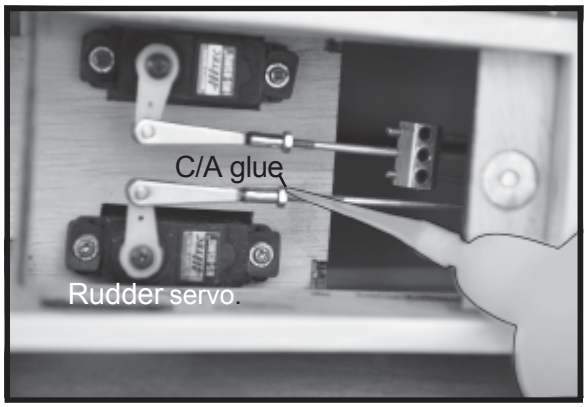












INSTALLING THE RECEIVER AND BATTERY.

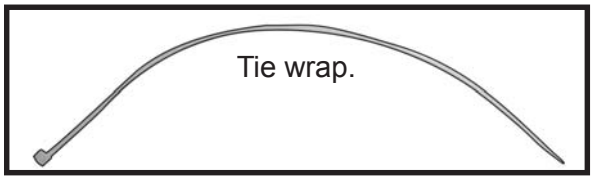
☐ 1. Plug the servo leads and the switch lead into the receiver You may want to plug an aileron extension into the receiver to make plugging in the aileron servo lead easier when you are installing the wing . Plug the battery pack lead into the switch.

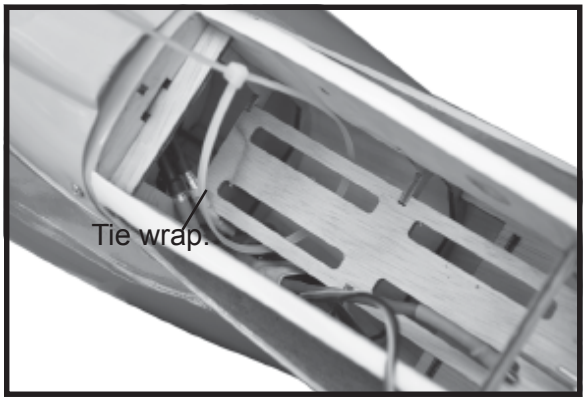
☐ 2. Wrap the receiver and battery pack in the protective foam to protect them from vibration. Use a rubber band or masking tape to hold the foam in place.

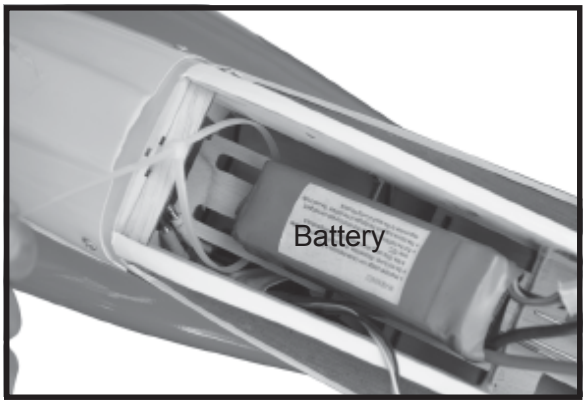
☐ 3. Position the battery pack and receiver behind the fuel tank. Use two tie wraps to hold the battery and receiver securely in place. As pictures below.

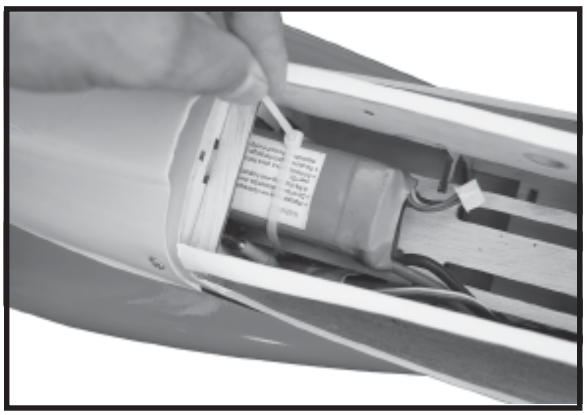
Do not permanently secure the receiver and battery until after balancing the model.

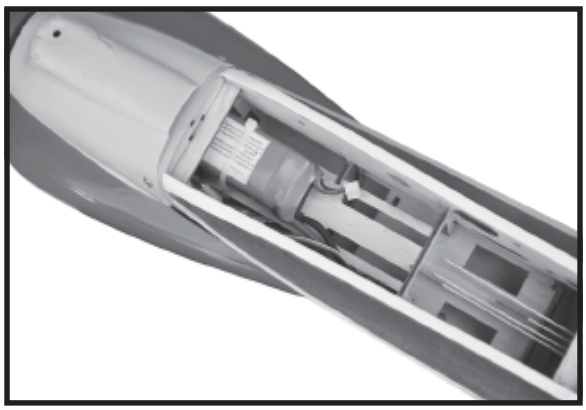
☐ 4. Using a 2mm drill bit, drill a hole through the side of the fuselage, near the receiver , for the antenna to exit.

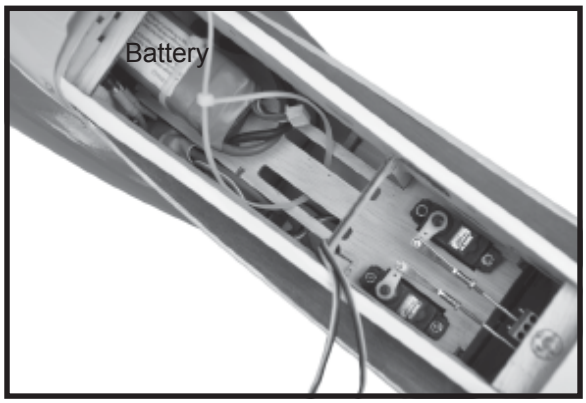


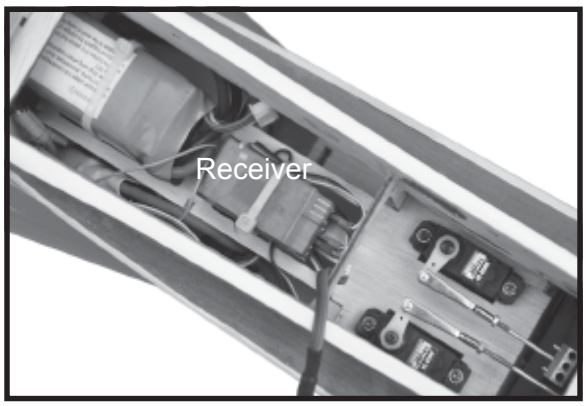








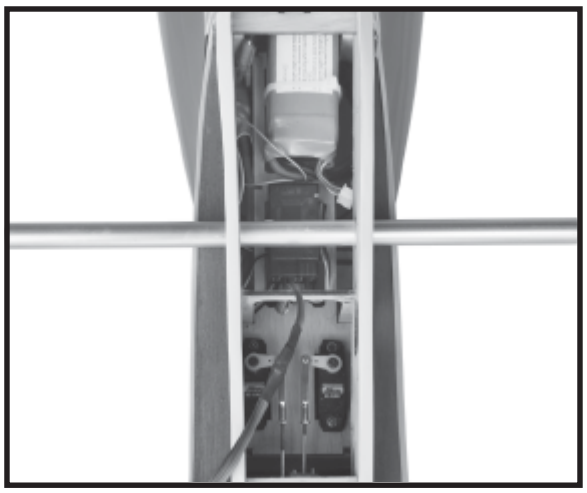


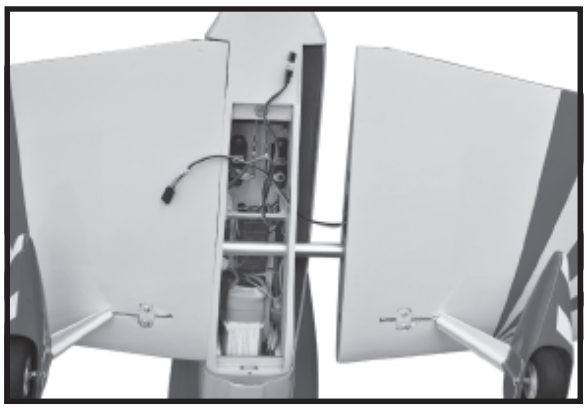


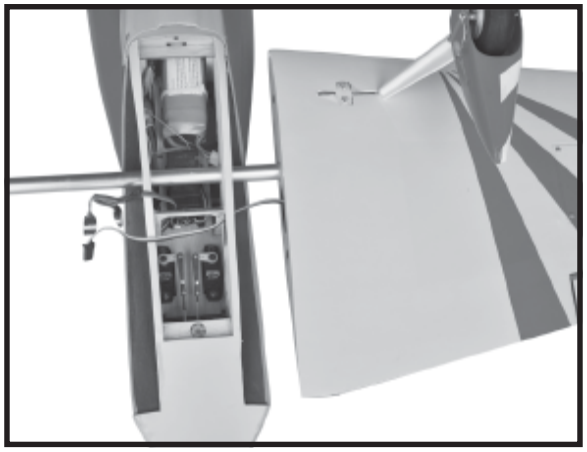
WING ATTACHMENT.

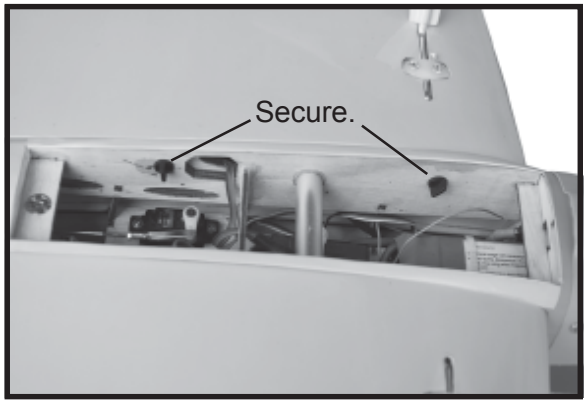
☐Locate the aluminium wing dihedral brace.

*** Test fit the aluminium tube dihedral brace into each wing haft. The brace should slide in easily. If not, use 220 grit sand around the edges and ends of the brace until it fits properly.





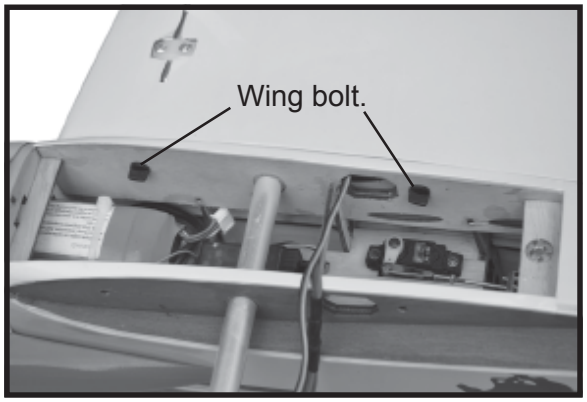


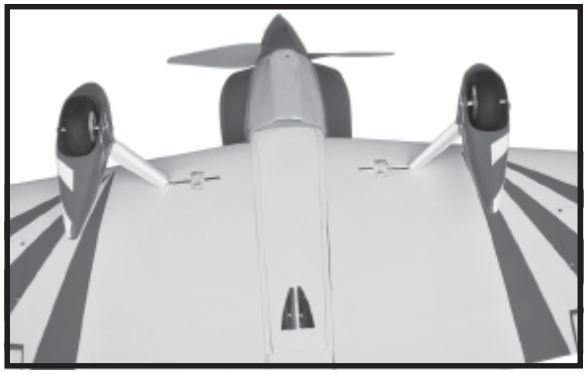


WING ATTACHMENT.

See picture wing attach to fuselage.

Installing the fuselage hatch as same as picture below.





BALANCING.

☐ 1) It is critical that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash.

THE CENTER OF GRA VITY IS LOCA TED ***80MM*** BACK FROM THE LEADING EDGE OF THE WING.

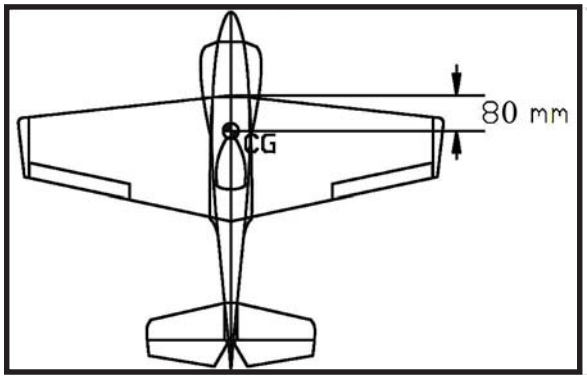
☐ 2) Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the top side of the wing **80mm** back from the leading edge, at the fuselage sides.

☐ 3. Turn the airplane upside down. Place your fingers on the masking tape and carefully lift the plane .

Accurately mark the balance point on the top of the wing on both sides of the fuselage. The balance point is located**80mm** back from the leading edge. This is the balance point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving the balance forward may improve the smoothness and arrow- like tracking, but it may then require more speed for take off and make it more difficult to slow down for landing. Moving the balance aft makes the model more agile with a lighter and snappier ”feel”. In any case, please start at the location we recommend .

Lift the model. If the tail drops when you lift, the model is “tail heavy” and you must add weigh* to the nose. If the nose drops, it is “nose heavy” and you must add weight* to the tail to balance.

With the wing attached to the fuselage, all parts of the model installed (ready to fly), and empty fuel tanks, hold the model at the marked balance point with the stabilizer level. *If possible, first attempt to balance the model by changing the position of the receiver battery and receiver. If you are unable to obtain good balance by doing so, then it will be necessary to add weight to the nose or tail to achieve the proper balance point.



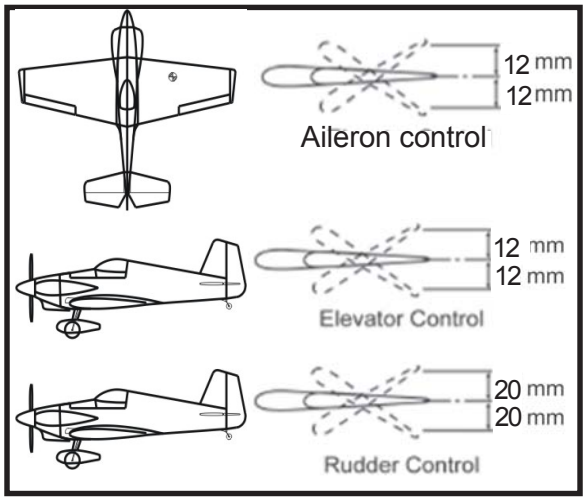
CONTROL THROWS.

‣ 1) We highly recommend setting up a plane using the control throws listed.

‣ 2) The control throws should be measured at the widest point of each control surface.

‣ 3) Check to be sure the control surfaces move in the correct directions.

Ailerons :	12mm up	12mm down
Elevator :	12mm up	12mm down
Rudder :	20mm right	20mm left



PRE-FLIGHT CHECK.

‣ 1) Completely charge your transmitter and receiver batteries before your first day of flying.

‣ 2) Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.

‣ 3) Double check the balance of the airplane.

‣ 4) Check the control surface.

‣ 5) Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.

‣ 6) Properly balance the propeller.

We wish you many safe and enjoyable flights with your MIDGET MUSTANG -EP.